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Environmental Issues In Alberta

REGIONAL
REVIEW

ENVIRONMENT VIEWS

Contents

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Introduction/Gillian Sniatynski

The state of our environment

What is the state of the environment in Alberta?

That's something *Environment Views* is continually trying to probe. But in this issue, we're going about it somewhat differently.

Instead of focussing on a single theme of environmental concern, we've tried to explore what specific environmental problems emerge in different regions of Alberta.

Regional planning commission areas seemed to be logical units of study, so we broke down the province on that basis — aware all the while of some flaws in such arbitrary divisions, and adding a couple of modifications. The Eastern Slopes seemed to merit separate treatment — and we inserted our own restricted version of "The North," as the map on Page 4 shows.

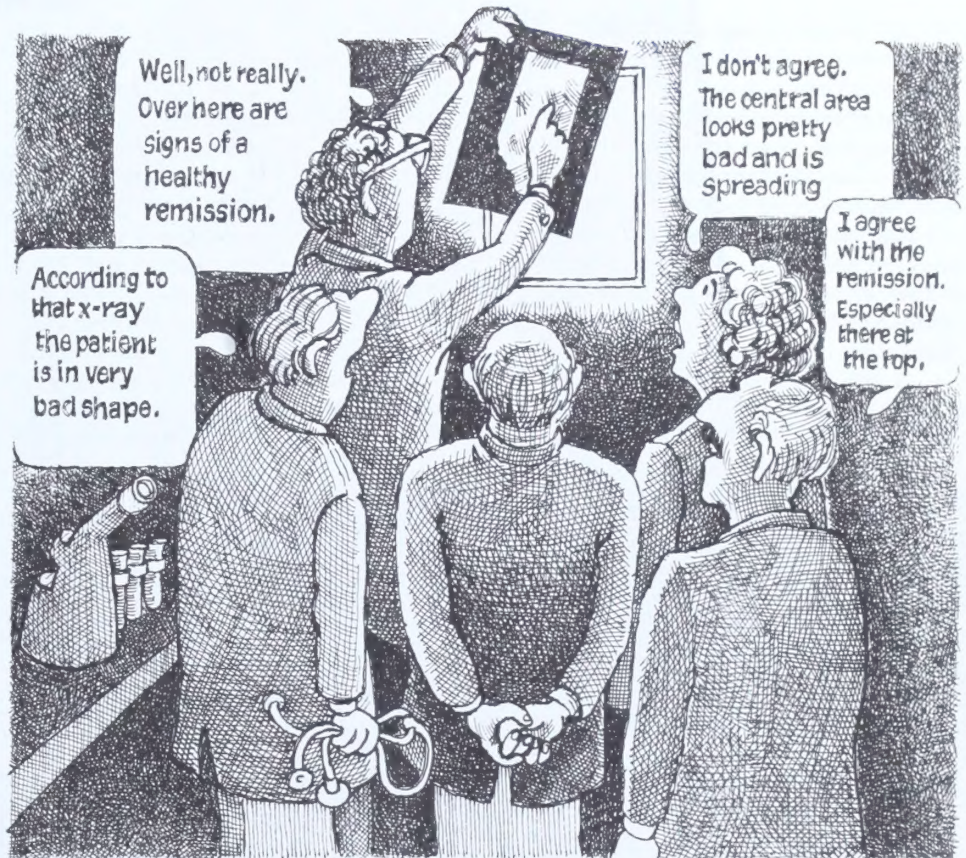
We hoped in each region to get different perspectives on environmental issues. So where possible local residents, as well as people from government, industry and environmental groups, were asked for input.

The outcome, understandably, is impossible to summarize. What emerged was a series of local concerns, reflecting geographic, climatic and economic factors in each region. But a common thread was the conflict created by development (whether of industry or an irrigation project) and the people pressure which usually followed.

Reactions to the conflict differ. Eugene Kupchanko, Alberta Environment's assistant deputy minister for environmental protection services, has expressed concern about such environmental problems as acid rain, the disposal of hazardous wastes and the long-term effects of certain contaminants. But he believes the problems are manageable. The department's objective, he says, is to balance the province's industrial growth with environmental protection.

"In that respect I think we can provide the right environmental controls, and hopefully we can have a good environment and have the amenities of industrial growth."

Some others, asked to take a bird's eye view of the Alberta environment in the light of other areas of the country, were less



sanguine.

Ken Brynaert, executive vice-president of the Canadian Wildlife Federation, said, "I don't think Alberta is any worse — but I don't think it's much better."

"The whole question of environmental quality in terms of what organizations like ours would like to see happening is something less than what should be done."

Raymond Orr, director of the Alberta district office of the federal Environmental Protection Service, spoke of a personal concern about the "overdevelopment mentality" in the province, which "has tended to pay lip service to the environment while allowing too much development to go on."

Rick Pratt, conservation director of the Canadian Nature Federation, said his impression is that the province lags behind in certain areas — notably acid precipitation control, sulphur dioxide emission control

and wilderness protection.

The stories that follow take the worm's eye, rather than the bird's eye view. And they leave little room for complacency.

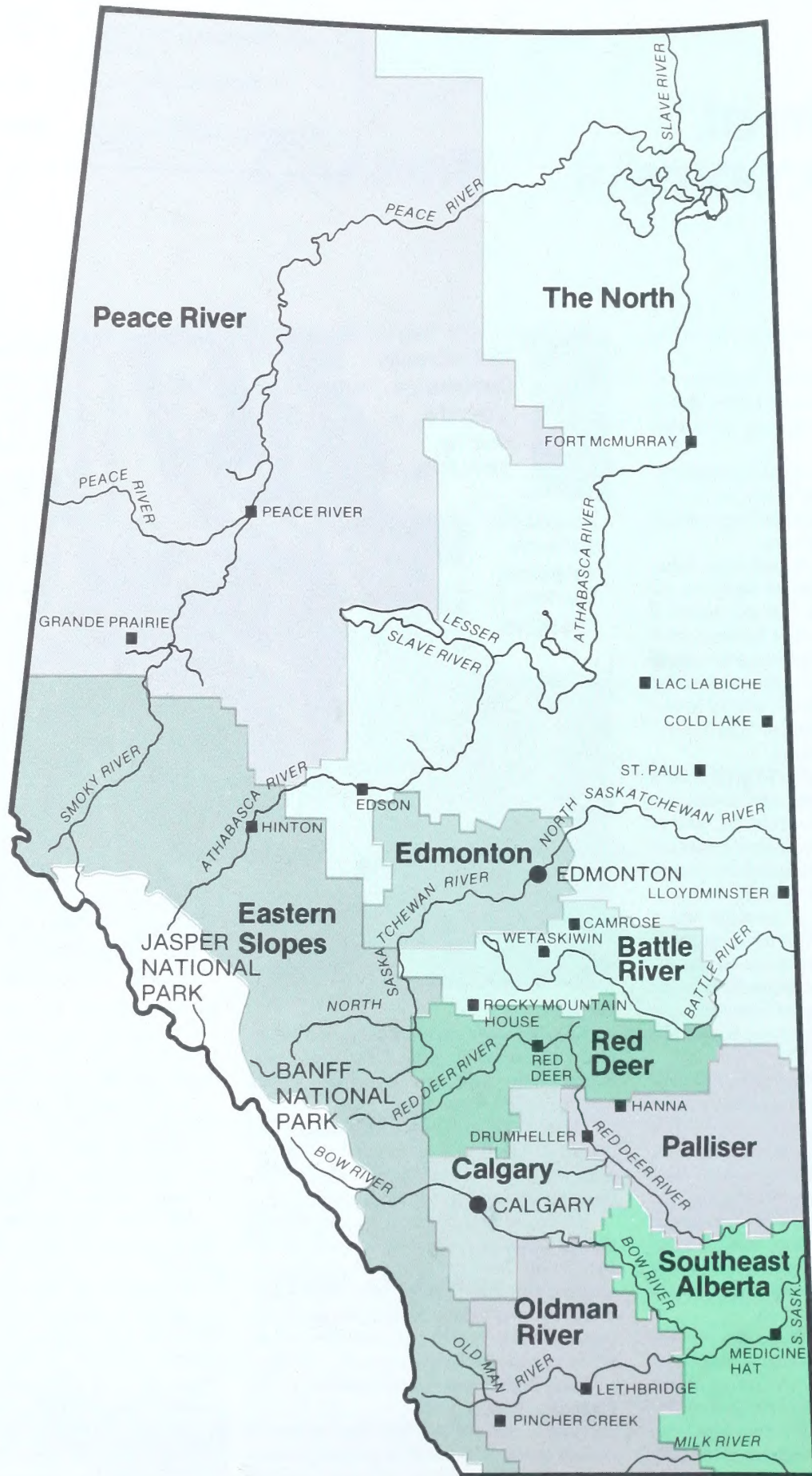
But we can't pretend, either, that they represent an exhaustive and total coverage of Alberta's environmental scene. There were limits to the writers' time and resources; space constraints further curtailed us.

We hope, though, that this issue represents a step in the direction of a composite picture.

We'd like our oversights included, and our errors set right. So we'd welcome feedback. Indeed, we urge you to react to the contents of this magazine, more than to any other we've so far produced. Part of our mail-back card this time has a place for your comments. PLEASE send them. Space in future issues will be reserved for follow-up.

Gillian Sniatynski is the freelance editor of this magazine.

The Regions



Norma Ramage

Southeast . . .

where environmental issues don't yet loom large.



Telling a resident of Medicine Hat that you're from Calgary isn't likely to endear you to him.

That's because Calgary is the major source of one of the biggest environmental problems plaguing not only Medicine Hat but most of the southeast Alberta regional planning area.

That problem is water pollution. Dangerously large amounts of phosphates and nitrates are dumped into the Bow River by Calgary's two sewage treatment plants. Every year, the two dump between one and two million pounds of phosphorus into the Bow from where it is carried downstream to the Bow's confluence with the South Saskatchewan River near Medicine Hat.

Since this area nestled between the Saskatchewan and U.S. borders is primarily given over to dry land farming and ranching, the water from the two rivers is vital, not only for irrigation but as drinking water for both humans and livestock.

The high concentration of phosphates in the water also encourages the growth of algae which blocks up irrigation and sewage systems, says David Boote of the Southeast Alberta Regional Planning Commission.

Initial steps to alleviate the problem were taken last year when Environment Minister Jack Cookson ordered Calgary to spend an additional \$24 million to expand the phosphorus treatment facilities at its Bonnybrook treatment plant. But this equipment won't be operational until 1983 and at least one local resident is doubtful whether it will do the job.

"Calgary's getting bigger all the time and will soon have a million people," says Brooks town councillor Jean Franklin.

"What I see indicates this plant won't be enough."

Franklin was one of the organizers of an 11,000-name petition that was presented to Cookson last year asking him to take drastic measures to clean up a river Franklin calls "a bloody sewer". Although the group met with initial success in the form of the Bonnybrook extension, Franklin says she's not finished fighting. She's already planning

talks with Calgary mayor Ralph Klein, who as a CFCN-TV newsman did a story on the Brooks problem.

However, not all the blame for pollution in the South Saskatchewan can be laid at Calgary's door, says Boote. A lot of the phosphates that find their way into the river come from the Oldman River, the result of the effluent being dumped by the Taber beet plants.

Apart from the constant problem of water quality in its rivers, however, southeast Alberta seems relatively blessed with a stable,

problem-free environment — or at least with a population that doesn't perceive many major environmental upsets on the horizon.

An example of their equanimity is found in their response to the proposed construction of an off-stream reservoir at Forty Mile Coulee Creek near Foremost. In other parts of the province, an announcement that several thousand hectares of grazing and farm land would be flooded would likely result in the instant formation of half a dozen special interest groups eager to protect the wildlife, the plant life or their own land rights.



Medicine Hat

Prairie view, Suffield area (below).

But around Foremost, the only reaction has been a practically unqualified enthusiasm for the project, says Oliver Hodge, editor and publisher of the Bow Island County Commentator.

"There are a few environmentalists that seem to be more concerned about saving a few gophers and rattlesnakes than in helping the ranchers but most people are happy about the opportunity of turning dry land into irrigated land," says Hodge.

And even most environmentalists look at the project positively.

Horst Fauser of the Alberta Fish and Game Association says he's had no complaints about damage to the wildlife habitat because of the flooding.

Even ranchers whose lands will be flooded are enthusiastic about the project.

"Only about 30 acres (12 hectares) of the land that will be flooded is cultivated," explains local rancher David Geldreich who himself will lose a few hectares. "The rest is uncultivated and we think it's worth it to get an irrigation system."

The reservoir will also provide opportunities for swimming, sailing and water skiing, an attractive concept in an area that has for so long been a recreational no man's land.

But although ranchers may be enthusiastic about the Forty Mile Coulee project, there are other environmental problems that are giving them concern. One of these is reclamation of well sites.

Hundreds of gas wells are drilled annually in the southeast part of the province and half of them turn out to be dry. Before they can be abandoned, Alberta Environment demands that the site be reclaimed but often, says David Boote, that reclamation doesn't satisfy ranchers.

"There's a good deal of concern arising over the conflict between what the land owner thinks is a good reclamation job and what the industry thinks is good," he says.

"It's pretty pathetic, some of the reclamation attempts."

But industry sources point out they spend a lot of money on reclamation, including going as far as hiring outfits like Western

Oilfield Environmental Services which specializes in well reclamation.

One of the problems, they say, is that the land is very dry and grass is hard to grow. Consequently, it's difficult to reclaim the land instantly to a state it has taken nature centuries to achieve.

While most ranchers agree there is an on-going problem with well site reclamation, most also admit that the situation varies drastically from company to company with some doing a conscientious job of reclaiming the sites.

But they're also agreed on another problem, one that is annually becoming more crucial, and that is over-use of the land for resource drilling.

The increasing demand for natural resources has resulted in wells being dug in areas previously thought uneconomical, and ranchers are worried that the oil and gas wells may soon drive agriculture from the area.

Rancher Gary Lehr says that where there used to be one well site per quarter section



Alberta Government Photo



Alberta Government Photo

on his land 10 years ago, there are now seven. In a few years, as resources become ever scarcer, he fears that number could go as high as 19 wells per section. (An ERCB spokesman doubts Lehr's fears are justified. At present, regulations specify one gas well per formation per quarter-section. Drilling to deeper formations in the Milk River and Medicine Hat areas could result in up to 12 wells per section, but more would be unlikely.)

In any case, what started out as a heaven-sent opportunity to earn some extra money is now becoming a nightmare for ranchers like Lehr.

Each well requires its own access road. These roads often cause erosion and otherwise damage the already delicate environmental balance of the drylands.

Moreover, several different companies may be operating wells on any one section of land. Thus, pipelines for four or five companies may criss-cross one section of land.

"If a farmer wants to put in his own



Milt Reinhardt

irrigation pipeline in the same location then he has either to spend a lot of money going underneath existing pipelines or financially compensate the company for moving its pipeline," explains Lehr.

Despite these problems, however, environmental issues still don't loom large in the minds of most residents of the southeast.

Wally Tullis, who recently held a series of public meetings in the area dealing with possible sites for hazardous waste disposal, found the people generally disinterested. They neither fought hard to get the disposal site located in their area nor fought hard to keep it away.

One area, however, that does sporadically provoke public ire is the federal government's Suffield Military Experimental Range just northwest of Medicine Hat.

In 1980, the then mayor of Medicine Hat, Milt Reinhardt, accused the federal government of dragging its feet on inquiries into the safety of chemical and biological

warfare tests held at Suffield in the fifties and sixties.

Documents released under the U.S. Freedom of Information Act showed Canada and the U.S. tested biological weapons such as typhoid and ungulant fever at Suffield as late as 1967. Reinhardt felt the citizens of Medicine Hat had a right to know whether or not the military range was still safe, but his pleas fell on deaf ears. The federal defence department told him the matter was still classified.

Although concern about possible biological residue has died down in the intervening year, the Southeast Regional Planning Commission still keeps a watching brief on the matter.

But so far, says Boote, they haven't had much more luck than the mayor. The answer from the defence department remains the same — it's top secret and classified.

In Medicine Hat itself, another problem has appeared in recent times that helps take

people's minds off any mysterious evil botulisms that may be thriving in Suffield. Air pollution has suddenly become a noticeable and annoying problem for the city, says Boote.

The main contributors to the pollution are the Western Co-operatives Fertilizers Ltd. plant and Cancarb, a plant that manufactures rubber compounds.

However, Alberta Environment tests taken a few years ago found that although the air may look and smell awful sometimes, the amounts of nitrogen dioxide, carbon monoxide and suspended particulates in the air are well within provincial standards.

Some residents, however, are not convinced. They point out that none of the environment department's four monitoring units were ever established northeast of the plants to record downwind pollution factors.

While Medicine Hat suffers from dirty air, Brooks has been suffering intermittently for the past year or so with a seemingly-jinxed sewage system.

The new, \$2.9-million plant, which went into operation just over a year ago, has been hit by one disaster after another. Since it opened, there have been seven leaks in the pipeline running from the town to the sewage lagoon. The most recent break last January caused a spill of raw sewage into the Eastern Irrigation District's Bantry Canal, a source of animal and human drinking water for many area residents.

Sewage also leaked into the adjacent One Tree Creek, prompting an investigation by health officials concerned at the level of effluent in the water.

The problem is finally being cleared up, but as one resident drily points out, "It's costing the town another \$2 million to fix something that only cost \$3 million in the first place."

Still, compared with some of the critical environmental problems that plague other areas like the Oldman Basin and the Eastern Slopes, southeast Alberta is relatively blessed. As one older resident explained it: "It's a pretty good place to live."

Norma Ramage is a journalist in Calgary.

Sharon Adams

Oldman River . . .

where the pressure is on water.



Water is the greatest environmental challenge in the Oldman River region. The area's rivers are under pressure to provide water for towns, farmers, ranchers, fishermen, wildlife and recreation. With so many conflicting demands, anger and compromise are facts of life.

Irrigation is the biggest water-user and operates in the midst of controversy and restrictions. At least half the water of east-flowing rivers must be left to provide for Manitoba's and Saskatchewan's needs and similar agreements exist to ensure south-flowing rivers have enough to meet United States requirements.

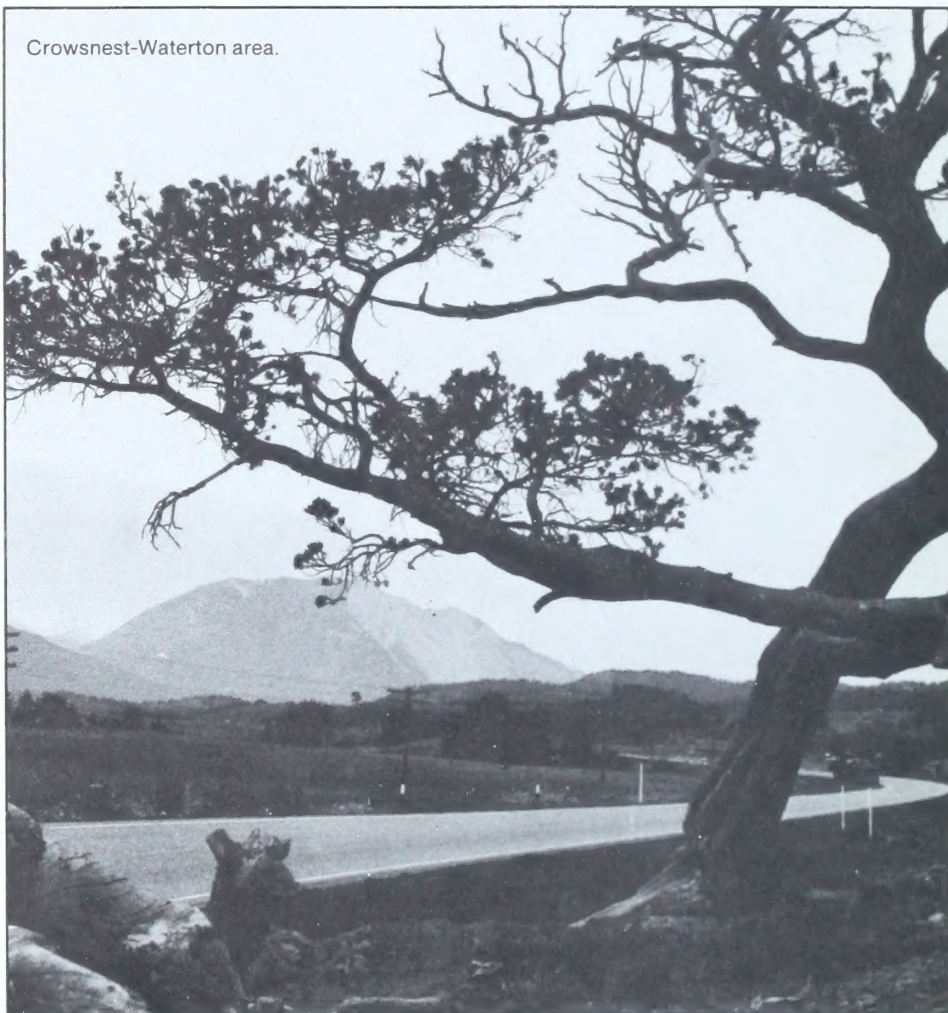
There are natural restrictions, too: rivers here have steep grades, so spring run-off is fast. Most of the water available for capture rushes by in a six-week early spring period, but is needed during July and August when the hot summer sun and cloudless summer skies co-operate to bake the land dry. The steep grades and narrow channels of rivers also leave only small areas for water storage. With a premium on storage, not all farmers wanting to irrigate can be accommodated. More demands mean more storage sites and higher costs.

Critics of irrigation have three basic arguments: it's unfair to dispossess those who should benefit from their foresight in choosing the lushest natural sites; irrigation provides unfair competitive edge against the dryland farmer; and finally, irrigation is expensive and the benefits from large expenditures of public money go to too few.

After six years of study and public hearings, the province decided in 1980 that by the year 2000 the irrigated area in southern Alberta would be increased to 600,000 from 400,000 hectares. It committed \$343 million of Heritage Savings Trust Fund money to expand the Oldman irrigation system and \$140 million more for a 2,320-hectare dam and reservoir, preferably at a Three Rivers site, northwest of Pincher Creek.

Before it reached that decision, a number of complex possibilities had to be considered. What would be the effect of mountain logging on downstream flow? Would on- or

Crowsnest-Waterton area.



off-stream storage be best? What would be the best economic use of such a large investment? What about environmental consequences? How much and what quality of water would be left when the rivers flowed out of the province?

Selection of dam and reservoir sites seems to cause the most bitterness. Farmers and ranchers who had the luck or foresight to claim lush river bottom are angered at the threat of dispossession for "the greater good." Wildlife organizations like the Alberta Wilderness Association, the Wild Trout and Clean Water Society and the Fish and Game Association are concerned changes in land

and water habitat will result from construction of storage sites. Dryland farmers complain that investment by government in storage sites and distribution systems represents unfair competitive advantage, in the form of government subsidy, to the irrigation farmer.

Provincial preference for the Three Rivers dam site has been criticized by many, including the Environment Council of Alberta which recommended against a dam in 1979, and termed that site the most socially and environmentally damaging.

Fish and wildlife organizations are worried a Three Rivers dam would spell death to three of the province's dwindling number

Haying and silage making, Picture Butte.

of wild rivers, the Oldman, Castle and Crow. Some of the province's best sport fishing sites would be lost, and more habitat for fowl and ungulates would disappear.

But these critics may yet be at least partially satisfied, for the Oldman River flows through the Peigan Indian Reserve, and that band has been granted two years to assess feasibility of building a dam near its western border.

Devalon Small Legs, reserve land manager, says such a dam would represent a great opportunity for the Peigans, but also would pose great problems.

The 12.8-kilometre by 1.6-kilometre dam would straddle the reserve boundary, forcing out 25 families, most of them on the reserve. Long-term benefits to the Peigans include an astronomic jump in reserve irrigation, from about 48 hectares to thousands of hectares, and help in cutting the 70-per-cent unemployment rate by providing extra agricultural and dam maintenance jobs.

But there would be many adjustments. A steady income can pose a problem to those unused to handling large and regular doses of money, and loss of native culture through assimilation is a concern.

As well, Albertans as a whole could lose culturally because the dam would also flood out more than half a dozen archeological digs.

The Milk River area is also in need of more water. One farmer said it could take a lifetime to work up the list of those waiting for irrigation licences. But to accommodate these farmers, other landowners will lose.

Dryland farmers feel they're not only at the mercy of the elements in scratching a living, but meet unfair competition from irrigation farmers, who gain from government subsidy of irrigation expense.

The province picks up 86 per cent of the tab for dams and reservoirs while the farmers pay 14 per cent. Drylanders are upset that the province has promised a half-billion-dollar investment on land which according to 1978 provincial agriculture department statistics, supports about 3½ per cent of the province's total crop acreage and about 8⅓



Alberta Government Photo

per cent of the value of crop production.

But irrigation farmers argue that it is irrigation which supplies the market during drought years, thereby instilling confidence in the area's ability to produce, and also provides feed for dryland ranch operations at a time when feed might be more highly priced or difficult to get.

Jim Brown, general manager of St. Mary River Irrigation District, points out population is higher in irrigation districts than in dryland areas, because the land can support more. And irrigation farmers claim money invested in agriculture provides more jobs than equal investment in the petroleum industry, and agriculture jobs do not dry up with fossil fuels.

Though farmers pay 14 per cent of the costs associated with capturing irrigation water, they must also pay for the operation, maintenance and administration costs of their local irrigation district. Then comes the \$160 to \$200 per hectare cost for expensive and energy-hungry equipment. And this at a time when rises in produce prices do not reflect rises in interest rates and fuel costs.

While irrigation floods out some types of habitat, it creates others, says Lorn Fitch of

Alberta Energy and Natural Resources' fish and wildlife division in Lethbridge. Willow growth along inefficient older irrigation systems provides habitat for uplands fowl and white tail deer.

Choice of the Three Rivers dam site would ruin some cold water fish habitat, reducing the species of trout particularly.

Oxygen decrease in the rivers and salination of irrigated soil are other effects of irrigation.

Water warmed by the irrigation processes contains less oxygen, depleting fish population and encouraging plant growth which is made worse by fertilizer run-off from fields and seeds spread through waterfowl droppings. Aquatic plants choke downstream pumps and irrigation machinery.

Salination is a growing problem. Though irrigation could increase arable land to 800,000 hectares (about 2 million acres), as much as 80,000 hectares could be completely or partially lost through salination. This occurs when water dissolves salts in the soil, which are then brought to the surface during evaporation or transpiration. Dryland summer fallowing on soil with poor drainage can also cause salination. Several govern-

Canmore miner.

ment departments are working on ways to desalinate soil, but prevention, watching for over-irrigation, providing good drainage and use of pipelines instead of open waterways, could be the best answer.

Though irrigation grabs the biggest headlines, there is increasing call for water for recreation. Many Oldman River region residents live some distance from lakes or navigable rivers and see no reason why irrigation works cannot be used for dual purposes.

Overall, residents of the Oldman River region seem less concerned with possible environmental problems than with economic benefits. Hungry for jobs in areas with steady population or slight decreases over the years, residents here are more willing to make compromises.

For instance, three large underground mines are planned in the area north of Lethbridge by Fording Coal Ltd., Petro-Canada and Union Gas. Each mine is estimated to produce a million tonnes of coal per year for about 20 years, and to provide 300 direct jobs as well some spin-off jobs in local communities.

The major concerns are about coal dust and subsidence, but most residents of Kipp, Picture Butte and Shaughnessy welcome the possibility of development.

Petro-Canada's board of directors were to have decided whether or not to proceed with the Kipp mine, and if so how quickly, at a meeting in October. Community concerns were among the factors that affected the decision.

Coal dust was a concern to the company, too, since the mine area is located in a windy area, but modern washing technology is expected to prevent the problem where it most often occurs, during the loading operation.

Subsidence could also be overcome by modern mining technology.

Residents of Crowsnest Pass are familiar with subsidence problems. Much of the town of Blairmore, for instance, is built on top of or around old underground mine workings. With erosion and changes in weather, occasionally old tunnels cave in, posing a danger



Alberta Government Photo

— and a bureaucratic problem.

Crowsnest mayor Dr. John Irwin says often the companies responsible for the origin of the mine have long since become defunct, leaving some question as to who's responsible for filling in the hole.

Crowsnest has three other environmental concerns.

Formed three years ago by amalgamation of five previously distinct jurisdictions, Crowsnest municipality has about 7,430 residents in about 135 square kilometres. The new municipality has inherited the water and sewage problems shared by its predecessors. The biggest problem is the Bellevue sewage lagoon, which has an inefficient aeration apparatus, poor feedback between its two parts, about a million gallons of groundwater seeping in annually to overload the system and possibly also some broken pipes.

This contributes to a "malodorous condition"; in addition, because the bacteria are

not being properly handled in the lagoon, effluent goes into the river "in chunks" — a situation described by several residents as disgusting.

A lagoon capable of handling sewage from all the community as well as a new water system would help solve the problem.

Amalgamation has also allowed Crowsnest to approach a decades-old problem with new authority. Travellers through the Crowsnest Pass are familiar with the growing piles of mining debris — coal, coal dust and rock — needing reclamation.

A seven-member committee was appointed to examine methods of reclaiming existing piles, look into business proposals for marketing recoverable coal and consider the municipality's coal-mining future.

Eight million tons of debris are lying about. Some commercial marketing of the salvageable debris is already under way, a new highway will take care of some of it,

Milk River region (top). Irrigation, Lethbridge area (below)



and the committee is to make recommendations soon on how to handle the remainder.

Provincial methods of eradicating the pine beetle are threatening some area businesses as well. Current practice (see the story on Page 19) is to clear-cut affected areas, but this is having dire consequences for guest ranches located next to now-denuded slopes, and trail outfitters, who see some customers turned off by the prospect of spending a week on horseback in areas where logging operations are either going on or have left scars.

Land conflicts are not new to Oldman River region residents. For as long as the petroleum industry has operated, farmers and ranchers have had to share access with whomever held the mineral rights on their property.

Though in the past this led to much hard feeling, farmers are now becoming more familiar with their rights as landowners, and

have formed an organization to help smooth over surface rights problems.

The Surface Rights Protective Association now has hundreds of members, and its purpose is primarily to educate them and help them deal with petroleum company landmen and power companies seeking rights of way for transmission towers.

Though landowners have been able to appeal to the Surface Rights Board when unable to come to a settlement with those seeking access, many felt a cohesive organization would help reform the compensation system.

Nova, An Alberta Corporation, recently opened the door for annual, instead of lump sum, settlements, in exchange for access. Though this has been criticized by other petroleum companies, landowners claim it is fairer compensation. Compensation is often paid to one owner who subsequently sells, harnessing new owners with a problem

for which they received no compensation. Also, the extra expense of working around obstacles in fields is more readily calculated now that energy prices are rising quickly.

There is still no compensation, however, for Pincher Creek residents complaining of nausea, headaches and other illnesses. Suffering residents, particularly those with small children, connect the illnesses with the operations of gas plants in the area, and the Shell Waterton plant has undergone a series of air quality and soil tests over the past two years.

The Kananaskis Centre for Environmental Research, Alberta Environment and now the Canadian Public Health Association have launched studies. The Kananaskis Centre study showed no connection between illnesses and plant emissions.

Alberta Environment has conducted three air monitoring tests: one in 1980, another this spring, another in early September.

Alberta Environment spokesmen say they're stumped. Though results were not in on the September testing before publication, earlier tests showed no correlation between plant activities and reports of illness.

Complaints have come in under a number of conditions: when the gas plant was flaring and when it wasn't, at times of strong winds and during calms, during unusual and also normal weather conditions.

Alberta Environment even distributed forms to sufferers, asking them to note the times of complaints, but again there seemed to be no connection between the illnesses and the plant.

Plant officials, who also live in Pincher Creek, say they're equally puzzled.

Residents suffering the mysterious malady suspect the tests, wondering whether they have been independent, but those who do not suffer ill health also support the testing, believing monitoring now may stave off problems in the future.

And again, a large segment of the community sees the gas plant as an economic savior, and doubts that the mysterious illness is real.

Sharon Adams is a journalist in Calgary.



where: "there isn't a single more romantic word around than irrigation."

The arid stretches of southeastern Alberta covered by the Palliser Regional Planning Commission remain today much as they were a generation ago before oil and gas dampened the wick of an economy gone boom.

From Drumheller east to Saskatchewan and from the Bad Lands of the Red Deer River Valley north to Consort, the region's economy still pivots around agriculture. It's an area of small towns, family farms and ranches, unpaved roads and services that are few and far between. The shadow of the Depression is still visible here in the millions of hectares in Special Areas — the legacy of land that reverted back to the province during the Dust Bowl for want of tax payments.

And while the rest of Alberta has grown, the Palliser region has actually lost population since the 1920s. From a high of about 40,000, it's now at about 24,000.

It's a region of ironies too. While ranchers may have to spread cattle at one head per 16 hectares on the dry grasslands, wildlife still abounds. The city of Drumheller is grap-

pling with the problems of flood control while thousands of farmers can only sit back and brush the dust off their hats while thinking what they could do if only there were water available for irrigation.

The overriding environmental issue in the area, says Palliser Regional Planning Commission director Paul Fenwick, is the lack of water which is closely linked to the lack of growth. A commission survey found 55 per cent of the people identifying water as their major concern.

But a massive scheme is under consideration by the province to bring water to the parched Palliser region that could involve the allocation of millions, perhaps billions, of dollars.

Transportation minister Henry Kroeger, whose riding is in the region, has formed an Advisory Committee on Water that has prepared a study for cabinet on the possibilities of inter-basin transfer of water. This idea, around for several decades, involves bringing south some of the 83 per cent of the province's water which now flows north into

the Arctic Ocean. It is not known when a decision will be made, but among the development scenarios under consideration is the construction of dams on the Red Deer, Oldman and Bow Rivers and the diversion by canal of water from the North and South Saskatchewan rivers, and perhaps even from the Peace basin.

It's tempting to use the word mega-project to describe it — if it is ever approved. (*Editor's note: In a statement to the Legislative Assembly on November 27, Premier Peter Lougheed said that, contrary to recent public speculation, the government had no plans to proceed with any schemes for inter-basin transfer.*)

In a preliminary study, the Palliser Regional Planning Commission notes some of the drawbacks of the project. It would be extremely costly; it would involve disruptions to drainage patterns, land forms and wildlife habitat in both the source and receiving areas; it might involve legal problems with Saskatchewan under the terms of a 1948 agreement which regulates how much water must flow across the boundary; and the project would have to address difficult ques-

Delia, west of Drumheller (right);
Beynon, south of Drumheller (Page 12)

tions on who would be given top priority use of the water and under what circumstances.

"But I can't think of many people around here who would let some of the negative environmental aspects bother them if it meant some development," said Fenwick.

"We all know what this area could do with irrigation," said Hanna hospital administrator Tony Kollman, a resident of the town for 20 years. "Usually a fellow is lucky to get 15 to 20 bushels per acre. It's been wet this year and I know some fellows who are looking at yields of 40," he said.

"There isn't a single more romantic word to the farmers and ranchers around here than irrigation," added district agriculturalist Russ Horvey. "People here know what a struggle it can be, that's why irrigation is so important."

There is limited irrigation close to the Red Deer River. But across most of the area, ground water flows are limited while dozens of creeks are empty nine months of the year.

Soils in the region are varied, but thousands of hectares are of marginal farming value and are best suited for pasture and rangeland. That has led to some suggestions that a massive irrigation project would not worth the cost. The argument does not wash well with Kollman, for one.

"We've all been down to Brooks and seen what can be accomplished down there with irrigation. Our soils and climate aren't that much different," he said.

Sibbald farmer Murray Huston, a founding member of the Chinook Applied Research Association which studies dryland agriculture, couldn't agree more that the region needs water. But he's lived all his life in what's always been called "Next Year Country" and he wonders if he'll ever see an irrigation project proceed in his lifetime.

"I've been behind the idea of irrigation 100 per cent all my life, but it's a question of supply and demand . . . a half-section of irrigated carrots will supply the entire province. I think what we need most is irrigation on a smaller scale for forage crops," he



said.

The combined questions of irrigation and lack of industrial development came together in the Sheerness strip mine and power generating plant project which was approved in 1979.

When a similar project was proposed several years earlier for the Dodds-Roundhill area southeast of Edmonton, farmers were quick to rally and oppose the project. Their arguments were repeated a few years later when a site was being sought for a dam on the upper Red Deer River. Farmers asked again if it is ever justified in a food-starved world to take farmland out of production.

No similar opposition formed in the Sheerness project. When the Alberta Power project begins to generate by the middle of the decade, there will be a smokestack about 125 metres tall, transmission lines in several directions and thousands of hectares of land waiting to be torn open to reveal coal beneath.

But during 1978 Energy Resources Conservation Board hearings in Hanna on the project, local residents were interested mainly

in economic spin-off for the area and how much water farmers could buy for irrigation from a 40-kilometre long cooling water pipeline that will run to the plant from the Red Deer River.

"There are no great environmental concerns about the project," said Merrill McDonald, an associate professor at the University of Alberta who chaired public hearings on development throughout the region last year. "People are looking forward to it so that the town can grow and get some more amenities."

Don Richardson, chairman of the Hanna Chamber of Commerce, says the project will be good for the town. He figures it will add about 1,000 people to the current population of 2,500 over the next five years, but he is not worried about the sudden spurt in growth. "It's our feeling that it'll spread over four or five years so it won't be a sudden boom," he said.

Terry Christianson, Hanna's incoming director of Preventive Social Services, says the Sheerness project about 30 kilometres

Badlands around Drumheller.



south of town has already caused a run on housing. "There's almost nothing to rent. Housing is taxed to the limit and that just drives up the general cost of living," she added.

Christianson is already beginning to think of programs to make the newcomers welcome in a community where the established population may be somewhat suspicious of outsiders. "The people out at the workcamp now come into town but they stick together because they know one another. We've got to try and blend them into the community."

She's also worried about what will happen to wives in families that are attracted to Hanna by the Sherness plant. "Their husbands will be out there on long shifts and there are no jobs here for them . . . the question of what these women are going to do is something that needs to be addressed."

It's difficult to find anybody who'll speak against the project. One man did, but asked his name not be used because he doesn't want to start a feud with his neighbors.

"I see the mess they've made out there already and then I think of what it'll look like in a few years when the strip mine gets going. I've seen strip mines in Saskatchewan and I'm not impressed."

"My concern is that the plant will have to meet emission standards but who's to say that those standards are high enough or that they'll even be enforced?"

Richardson answered the objections this way. "I've seen strip mines in Saskatchewan but they were started years ago before there were environmental regulations . . . I've seen some strip mines that have been put back into more productive and scenic land than they were before."

Even C. Holtemeyers, one of the 13 permanent residents of tiny Sheerness, said the plant won't bother him. "It's seven miles away. I can't even see it and I have nothing against it," he said.

Another basic change in land use for the Palliser region is the pending transfer of portions of the Special Areas back into private hands.

The Special Areas consist of some 800,000

hectares of land that reverted back to the province during the Depression when taxes were unpaid. As difficult as it is to imagine today, when houses are scattered every few kilometres across the grasslands, homesteaders were allowed into the region at densities of four families per section.

There was little knowledge of dryland farming techniques or erosion control and when the winds and drought came, hundreds of families simply packed it in and moved. Abandoned farmhouses still dot the landscape.

In the intervening years, the land has been leased back to farmers and ranchers but starting in January, they will have the option to buy the land.

Letting fields lie fallow every other year and the fact that land use controls under the Special Areas will end when the land reverts to private hands has prompted some talk in the region that the conditions of the Dust Bowl might return.

"I can't deny that it hasn't been mentioned," said Special Areas Board chairman Abner Grove.

District agriculturalist Horvey said he's heard similar talk. "It's the old guys who fear that if the land goes out, the winds and drought could return."

But Horvey is also quick to add that conditions today are nothing like they were in the '30s.

"I think this area had a lot of bad publicity about those years," said Huston. "The land was overcrowded then by people who thought they were on a market garden. Everything was out of hand when the winds came."

"But the people who lease these Special Areas now are the sons and daughters of those years. They know how to make this type of agriculture work," Huston said that with proper techniques, erosion is not a problem. "I remember in 1961 there were winds as strong as in the Depression and nothing adverse happened."

While the rest of the region wonders what can be done to increase access to water, the City of Drumheller finds much of itself built on a flood plain.

Development restrictions have been invoked in the flood plain, but those provincial and regional planning commission guidelines are sometimes seen as unwanted interference in Drumheller where development is wanted. The city has barely grown in the past 25 years since the coal mines began to close down.

Bob Hardie, assistant planner for the Red Deer River Basin, said the entire question is under review. He said possible recommendations may include construction of dikes and encouragement of new development away from the area most likely to go under in a projected one-in-a-hundred year flood. But both steps could be disruptive.

"Anybody with a beautiful home on the river front is not going to take kindly to a four-metre dike," he said.

Jim Fisher of the Big Country Tourist Association said trying to encourage development away from the flood plain — perhaps to the top of the river valley — would cause an uproar in the downtown business community.

The entire question is on hold until details of flow restrictions that will be in place on the Dickson Dam on the upper Red Deer are finalized. "Once we know that, we have the hydrology all worked out and can move fairly quickly on recommendations," added Hardie.

Fisher said the flood plain problem is a double-edged sword for the 6,200 residents of Drumheller. Alberta Environment estimates a major flood could mean about \$6 million in damages.

"We haven't had any flooding problems for quite a few years but this summer, we had a bit of a scare with heavy rains and a few trees that blocked one portion of the bridge . . . we were within a foot of flooding the ball diamond," he said.

"This flood plain business has caused some unhappiness because it has restricted development. But if there ever were a flood, those same people would be out there complaining."

Cheryl Cohen

Calgary . . .

where concerns include urban sprawl, noise — and “The Sewer.”

At Carseland, a fisherman draws in his line from the Bow, untangles the green sludge from his dewworm and is thankful he caught nothing — the family might have wanted to eat it.

It is 7:30 a.m. on a Sunday. Upstream in Calgary, residents of a downtown highrise are being jolted from their sleep by the inescapable pounding of a pile driver.

It would be naive to expect the area around a city of 600,000 inhabitants to be environmentally perfect, especially in the wake of an overnight boom, and the Calgary region certainly has its share of environmental problems.

The Bow River, for instance — referred to in some quarters as “The Sewer”.

The Bow has become infamous not only downstream of Calgary — where there is an abundance of weeds in the river thanks to the nutrients contained in the 83 million gallons of sewage Calgary dumps into the Bow daily — but also in the provincial capital.

Calgary has become the first municipality in Alberta to be forced by the provincial government to remove phosphorus from its effluent. The province is contributing \$10 million; the city will spend millions more.

Two phosphorus-removal plants are scheduled to come on stream in the city by 1983, although, says Bow Valley Protection Society president Neil Jennings, latest word is they could be in operation by next spring.

Jennings, whose lobby group focuses on “anything we consider to be an environmental threat to the river,” has been following the phosphorus story for a few years.

At first, the society gathered reports on the river from “wherever we could — we’ve taken the approach that you don’t take the side of an issue without knowing what’s going on.”

They started investigating the quality of the Bow River and comparing results to the quality objectives of the province — “We found it didn’t meet *any* of the objectives.”

What really concerned them was the enormous quantities of weeds in the river — stretching from bank to bank in some places — coupled with violent swings in the amount

of dissolved oxygen in solution in the Bow.

“The problem with the Bow was they were introducing so much phosphorus that they were overfertilizing the waterway.” Artificial enrichment of the eco-system meant that all life forms in the river were multiplying more rapidly and getting bigger — hence the Bow’s famous trophy fish.

But, once the oxygen swing starts to get violent, Jennings notes, “it starts to put all the creatures in the system in a stress situation. You’re starting to put your whole eco-system into a dangerous situation.

“In the Bow, you were reaching proportions where you were courting disaster.”

The society started lobbying to get something done. They were not alone in their complaints and Alberta Environment was doing studies of its own. In the end, environment minister Jack Cookson announced the government would help finance a clean-up of the Bow.

Jennings respects Cookson “for the heat he took.” Acting sooner would have been on a “willy-nilly basis, without all the facts.”

Not everyone feels that way, though. Says Chris Dunkley, a Calgary member of the public advisory committee of the Environment Council of Alberta (ECA): “It should have been done 10 years ago.”



The city of Calgary (right). Bonnybrook sewage treatment plant (below).

Noise pollution is also a problem in Calgary. Traffic is a major source of complaints, but the fact that the city issues more building permits annually than any other city in Canada is an indication of another source of the city's noise — construction work.

The city is charged with keeping tabs on noise pollution through a bylaw, but a recent ECA hearing on noise pollution was told the bylaw has little teeth and a different approach might be more effective.

One of the outstanding environmental issues around Calgary right now is the proposed increase in production at the Esso Quirk Creek sour gas plant at Millarville, 55 highway kilometres southwest of Calgary, to handle gas from a proposed new Shell pipeline through Kananaskis provincial park.

The fate of the proposals is up in the air, since Energy Resources Conservation Board (ERCB) hearings into the proposals were adjourned until fall because of public concern about sulphur pollution.

Environmentalists have expressed concern about the Quirk Creek plant's sulphur emissions, chemical run-offs into soil and water, as well as the effect of a ruptured pipeline on Calgary's water supply — the pipeline is in the Elbow River watershed and the Elbow supplies two-thirds of Calgary's water.

Pincher Creek-based author Andy Russell, who "was in the neighborhood," has emerged as a driving force among the interveners:

"I'm not kidding myself that we don't need oil and gas," says Russell from his temporary home in Millarville. "I'm suggesting we've got to find ways and means of doing it right."

Among other things, Russell is concerned because, he says, Esso states it can't achieve 100-per-cent sulphur recovery. Russell feels this is "quite feasible" but would cost a lot.

"I guess we're sort of caught in the middle here," sighs Neil Walliser, Esso area superintendent at Millarville. "We feel the same way about contaminating the air . . . we also have a business to operate."

"I don't think anyone has any problem with trying to achieve maximum recovery

and minimum emissions — but it has to be a combined effort, in a realistic time-frame."

The Quirk Creek plant currently recovers 95.5 per cent of the sulphur involved in the processing of sour gas. The percentage was decided by the ERCB, considering the plant design and emission at the time. To increase the recovery rate would cost millions, Walliser adds.

He stresses the plant was built to handle 40 per cent more gas than it does now — the amount Shell would pipe in.

"Misconceptions" concern Walliser. "We're getting subjected to a lot of things that tend to be exaggerated because the real truth is not earth-shattering."

Both Walliser and Russell see the ERCB hearings as important.

To Walliser, "we happen to be the person on the line right now" in the energy industry. Any radical change in policy in the outcome of the hearings could set a precedent within the industry.

To Russell, it's a test case, and one in which he's invested much energy. Originally, he came from Waterton, he explains, and there sour gas plant problems led to two district evacuations. "This kind of thing is not something you sit back and watch. It's all very well for people to largely ignore it."

In smaller communities and rural areas near Calgary, the use and misuse of herbicides has emerged as a big environmental issue this year.

A story of herbicide misuse made headlines in Calgary in May when more than 30 Turner Valley school children were treated in hospital for illnesses immediately linked to the spraying of a chemical weedkiller in

the schoolyards.

About two months after the incident, the Foothills school board was fined \$500 after pleading guilty to using the herbicide Tordon 202C in an unprescribed manner.

A provincial government investigation determined, though, that many of the children's "illnesses" were imaginary, sparked by a psychosomatic reaction to the herbicide fumes and other children's complaints.

And in Three Hills, herbicides rank first





in environmental concerns of Alberta Agriculture district agriculturalist Ted Nibourg.

"This spring we've had a lot of people wondering what's wrong with trees and plants," he says. "I'm pro-herbicide, but 80 per cent of the damage was from misuse of herbicides."

His concerns were echoed by a professional agronomist who wished to remain anonymous.

The agronomist is annoyed because he feels farmers suffer through other people's misuse of herbicides.

DDT, for example, was "a hell of a good chemical," he says. "I suppose it was forestry services and the cities that used it wholesale. . . . The average farmer used it with no problem. But they banned it."

"The government today seems to be so conscious of its vote and the rural area has so little of that vote."

And then there is the complicated problem of Great Plains Mushroom Ltd. of Airdrie.

The company was formed in 1974, in what was then the outskirts of Airdrie, whose population has since jumped to 8,000.

The firm was assured there would be "no

residential development in the area," says co-owner Henry Rathge. But "a year or two later they started putting in subdivisions" and the firm now finds itself with residential neighbors who are complaining about the smells that emanate from the plant.

"It does smell. There's no two ways about it," says Rathge. Horse manure is used to fertilize the mushrooms and the fermentation process produces the smell.

Gordon Peck, regional supervisor for Alberta Environment's quality control branch in Calgary, picks up the story. Three levels of government have got involved, he says.

It was the municipal government that first allowed the plant to move in. Then the provincial government bought property in the area and developed it adjacent to the mushroom plant. Then the town took over the area and the plant now finds itself within town limits.

Rathge says he has not been asked to move. And "there's really nothing we can do unless the government decides to move us out."

Peck's department has asked for estimates of relocation costs. "It would cost upwards of \$1 million to relocate the plant," says

Peck. "We don't have any relocation grants. Three levels of government are involved — who would foot the bill?"

Peck's branch monitors the air around Calgary and ensures companies comply with air quality regulations introduced in 1971.

Only one industrial firm in Calgary has yet to comply with the 1971 rules, he says — an iron foundry that has been awaiting equipment.

Meanwhile, Peck says 83 per cent of Calgary's air pollution is caused by automobiles, less than nine per cent by industries and the rest by such things as space heaters, locomotives, aircraft and the dry-cleaning process.

In Calgary, "pollution is aggravated by meteorological conditions, and close proximity to the mountains." Chinooks bring low inversions, where warm air remains aloft, trapping all the pollutants below.

"We can have some very stagnant air here. Pollution builds up. People think there's more pollution being generated," but it's just the inversion, he says.

David Gemmill, an ECA public advisory committee member representing the Chemical Institute of Canada, feels the air pollu-



Agriculture, Millerville area.

Aerial photograph by David Cohen

tion problem in Calgary is "not getting any better."

Industrial activity in the city is not excessive, he notes. Air pollution from industries and refineries is "getting worse; they don't comply (with pollution control regulations) unless they're forced to."

The disposal of industrial or hazardous wastes is in the spotlight now. The outcome of two government reports is being awaited — one that will select sites for the disposal and treatment of the wastes in the province and another that will establish where all existing hazardous wastes in the province are.

Public concern about hazardous wastes has been conspicuous by its absence, though. At recent ECA hearings into the subject in Calgary, "there were not as many concerns expressed by the public as we had hoped

for," says Gemmill. At the noise hearings, though, "they had a fair number of responses — noise is obviously a little more direct."

Feedlots continue to attract controversy. In High River, a Western Feedlots Ltd. feedlot will open this fall two years behind schedule because of legal challenges and lengthy appeals.

The Foothills development appeal board approved the project in 1979 and in 1980, but the feedlot was delayed another year because of court action by local residents claiming the project could cause environmental damage.

One ongoing environmental issue is land use, including urban sprawl. "The planning commission is supposedly charged with proper planning, but most of what they come up with is overruled or pushed aside in favor of what city hall and developers agree on,"

charges David Gemmill.

A big annexation debate is seen looming for the fall, when the city is expected to seek annexation of more countryside. The problem is that Calgary is situated amidst prime agricultural land. And the city's population just keeps growing.

There is also the question of access to the Bow. Land-owners for a 70-kilometre stretch south of Calgary and recreation-seekers have been locking horns over this issue, with no resolution as yet.

Angry land-owners have barred recreation-seekers from access to the river because of problems they have had with the public. Angry members of the public are demanding their rights to the public waterway.

Cheryl Cohen is a journalist in Calgary

Norma Ramage

Eastern Slopes . . .

where the problem is people.

The main environmental problem plaguing Alberta's Eastern Slopes can be summed up in one word: people.

People who want a place to live and work. People who want to make money. People who want a place to play.

People like the four million visitors who descended on Banff National Park in 1980. People with all their conflicting needs and desires who often put an intolerable strain on the delicate environmental balance of the Eastern Slopes, an area of mountains, foothills and forests lying along the East Slope of the Continental Divide from the U.S. border to north of Grande Cache.

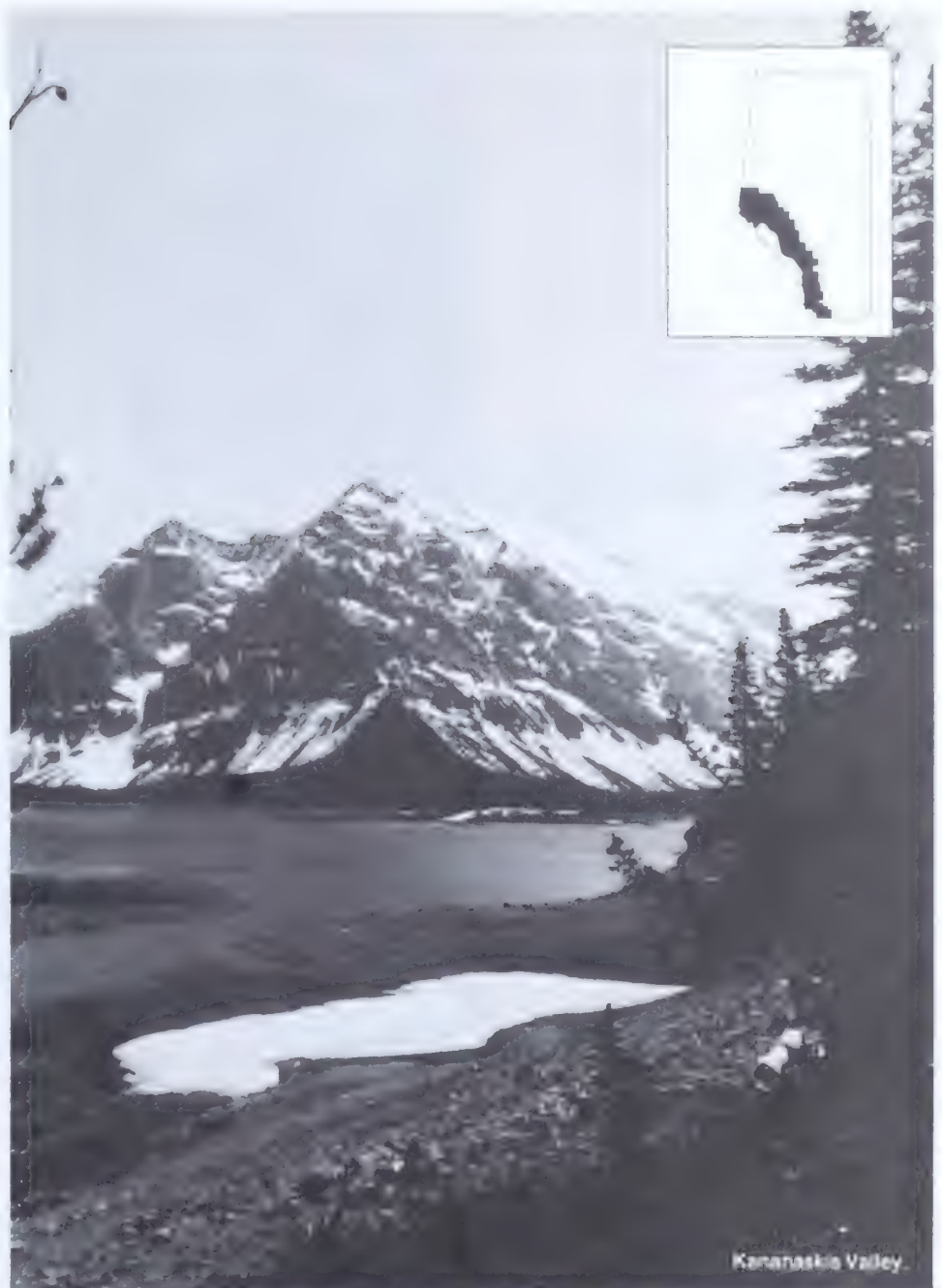
Both the federal and Alberta governments have long realized the importance and environmental fragility of the area and more than 95 per cent of it is Crown land administered by either Ottawa or Edmonton.

The Alberta government recognized in the early 1970s that the combination of a burgeoning population and a booming resource economy would bring great environmental pressures to bear. So after years of hearings, the province developed in 1977 the Policy for Resource Management of the Eastern Slopes.

This policy has been a great success, says Les Cooke, director of resource evaluation planning for Alberta Energy and Natural Resources and one of the men responsible for administering the plan.

The plan divides provincially-owned lands into three areas: Protection, Resource Management and Development. Each of these areas has strictly controlled development. Protection, for example, is the designation for wildlife habitats and delicate wild environments and no industry or agriculture is permitted.

While most interest groups support and approve the concept of the Eastern Slopes policy, there is still disagreement about implementation of the plan at an organizational level. Most disputes boil up about what should or shouldn't be allowed in the Resource Management zone which is further subdivided into special use, general recreation, multiple use and agriculture areas.



Kananaskis Valley.

Some of these areas allow industrial, farm land and recreation areas to exist side by side and that creates instant controversy. What, for example, constitutes general use? Just because an area is zoned to allow oil companies to drill wildcat wells, should they be allowed to do so regardless of possible environmental damage? Are government controls strict enough to prevent this damage?

Or just because areas like Kananaskis Country are zoned for general recreation use, is the government right to allow construction of alpine villages and downhill ski resorts in an area once cherished for its quiet, get-away-from-it-all serenity?

It's questions like these that Cooke terms "the line on the ground" problems that create most of the turmoil over environmental concerns.

But although the problems and controver-

sies are as diverse and complex as the people involved, they can broadly be divided into two areas: resource development and recreational land use.

How much and where oil, gas, coal and lumber companies should be allowed to exploit resources is a long-standing problem that's becoming more severe with the stepped-up search for dwindling resources.

Many areas of the Eastern Slopes are feeling the increased pressure as companies start exploiting remote lease holdings once considered uneconomical. Typical of the kind of problem being encountered up and down the Eastern Slopes is that now being experienced in the eastern Kananaskis.

Environmentalists and many members of the public are concerned with the problems arising from increased activity there by oil and gas companies. They say the com-

Sunshine Village resort.

panies are ignoring environmental concerns in their rush for profits and that the government is not being stringent enough in enforcing protection policies.

One example they use is the construction of roads for wild cat wells. They complain these roads are larger than necessary, too large to be properly reclaimed.

"It's beautiful country out there and it's being ruined with huge, ugly roads all over the place," says Richard Pharis, a University of Calgary biologist and past president of the Alberta Wilderness Association.

But both industry and government say the roads are only as large as necessary and that they are being reclaimed systematically and effectively.

Another conflict arises over the amount of timber cut by the oil and gas companies. In a study done two years ago, a University of Alberta professor claimed the oil and gas companies were cutting more lumber than the logging companies and, even worse, were leaving most of it to rot unused.

Oliver Glanfield of the forestry land use branch of Alberta Energy and Natural Resources concedes there used to be a problem with unsalvaged timber but he says new legislation forces the companies to salvage between 75 and 80 per cent of the trees they cut. The remainder is either too remote to salvage economically or is not commercially usable.

Government spokesmen in the seven departments that deal with the provincially-owned portions of the Eastern Slopes will admit they have made a few mistakes in trying to administer a brand new and unique resource policy. But they say they're learning quickly and overall, they feel they've done a good job in a difficult and delicate situation.

But a lot of people don't agree. Government bashing seems to be a favorite sport of many special interest groups. They insist government isn't adjusting fast enough. One of the departments that comes in for consistent criticism is the forestry service which many people feel is allowing over-cutting of a disappearing resource simply to provide

jobs in a financially-troubled industry.

Richard Pharis gives one example of what he feels is the Alberta forest service's reluctance "to see any tree die a natural death."

The forestry service has been allowing extensive logging in the southwest areas of the Eastern Slopes which have been heavily infested by pine beetles. The forest service says the dead trees are a serious fire hazard and that trees about to be infected have to be harvested while they're still usable. Pharis, however, says they're using the infected trees as an excuse to go in and harvest everything in the area with resultant damage to the water shed, wildlife habitats and the beauty of the area.

There is bitterness among many sectors of the public who feel the provincial government is pawning the environmental future of the Eastern Slopes to placate the province's powerful resource industries.

The government, on the other hand, points out that every development proposal for the Eastern Slopes has to pass a complex approval process that must satisfy seven government departments and the Cabinet.

But many people remain skeptical. They see the approval process and public hear-

ings as a whitewash job. They point to the many battles they've lost and recall public hearings where they opposed a development only to have it approved a few months later.

This kind of conflict and distrust is spreading into a new arena now, that of recreational land development. As people become more affluent and have more leisure time, there is a growing demand for new leisure playgrounds. Previously developed areas like Banff and Jasper are feeling new pressures while once virtually deserted areas of the Eastern Slopes are being eyed as new recreational facilities by tourists and developers.

The main conflict resolves itself into a battle between those that want to keep Alberta's wilderness areas untouched and growing numbers of people who don't see why they should have to don hiking boots or crosscountry skis to enjoy the province's scenic heritage.

Although this problem is becoming endemic throughout the Eastern Slopes from Waterton to the Willmore Wilderness, again a typical example is the development of Kananaskis Country, a beautiful mountain valley about 120 kilometres west of Calgary.

For years, the valley was virtually undis-



Alberta Government Photo

Bow Valley: Tail Creek.

turbed as tourists, both local and foreign, headed right past it for the better known Banff. But with the crushing need for recreational land for Calgary's burgeoning population, the government created Kananaskis Country and took over its management and development.

And it's how they're developing it that is angering people on both sides of the fence. Avid downhill skiers complain the government is dragging its heels in developing ski resorts to take the place of Banff and Jasper's overcrowded runs.

Four-wheel driver operators and snowmobilers resent attempts to fence them into small and restricted areas.

On the other side of the fence, environmentalists and wilderness aficionados like Pharis resent what they call the "urbanization" of Kananaskis. They're afraid it will become as crowded and commercialized as nearby Banff.

"Everything is becoming mechanically oriented," laments Pharis. "There's helicopter skiing and now there's helicopter hiking for fat, lazy rich people who can't be bothered walking to the top of a mountain."

"The trouble is, Kananaskis is being administered by politicians who never use the back country except to drive through it in a Winnebago."

While those trying to preserve the wilderness aspects of the Eastern Slopes will admit to being elitist, they argue that once it is gone, the wilderness can never be replaced. They say there are enough Banffs already.

However, Bryan Targett, a Calgary school principal and chairman of the citizens' advisory group on Kananaskis, thinks neither side is being fair to government. Targett, who says he and his committee represent a broad cross-section of Albertans, thinks the government has done a good job both of managing Kananaskis and of listening to the views and suggestions of the committee.

But trying to please all of the people all of the time is no easy task and it is particularly difficult in the case of the Eastern Slopes where there are so many interest groups, each with their own concerns and ideas.



Typical of the complexity of the environmental problems in the Eastern Slopes is the current controversy over the proposed Odyssey resort 140 kilometres west of Rocky Mountain House. The resort, a luxury hotel which will charge visitors hefty sums to sample Alberta's wilderness, has received a green light from the province but it's still being opposed by numerous people in the area.

One of these is Martha Kostuch, a veterinarian in Rocky Mountain House and founder of ALERT, the Alberta League for Environmentally Responsible Tourism. She is concerned that the development will damage the delicate, desert-like environment of the nearby Kootenay Plains, home to a dozen unique varieties of plant life.

She says she's not against the concept of a luxury resort like Odyssey, but she thinks it should be located where there would be minimal environmental damage.

"This situation is typical of many of the mistakes that have been made in implementing the Eastern Slopes policy," Kostuch says. "There wasn't enough consideration of the environmental impact or enough public participation. It's yet another example of policy

guidelines being bent by corporate pressure."

But like all questions concerning the Eastern Slopes, there aren't just one or two conflicting opinions, but dozens. Almost every section of the public and industry has a unique concern.

Businessmen in Rocky Mountain House favor the Odyssey development because they say it could mean as much as \$2 million annually to the central Alberta community. Loyal Ma, chairman of the Rocky Chamber of Commerce, estimates at least 80 per cent of the town's businessmen are behind the Odyssey project because they feel it will be good for the area's economy and will have only a marginal impact on the environment.

But one member of the business community that doesn't share Ma's optimism is Mildred McKenzie. She and her husband are outfitters who make their living taking tourists on trail rides and hunting trips into the wilderness near the Odyssey site.

She's afraid Odyssey is only the first move in what will turn out to be massive development of the area, a move she feels will destroy the wilderness and chase away the resident herds of bighorn sheep.

"We're offering a wilderness experience,"

Canoeing, Banff.



she explains. "With all the clearing for Odyssey, a ride in this area will soon be about as exciting as a ride around a farmyard."

McKenzie is also concerned because she says the area around Odyssey is one of the few accessible wilderness areas left.

"I'm concerned not just for my business but for the wilderness. You can't buy wilderness like this and you can't replace it once it's gone."

Les Cooke admits it is sometimes impossible to pursue a course of development that will make even some people happy.

"But the government feels the Eastern Slopes can provide a whole spectrum of recreational use, something for all types of

people."

However, Cooke is aware that with the increasing pressure on the Eastern Slopes, both for resources and recreation, the federal and provincial governments will have to be even more vigilant in future.

The federal government is already developing a master plan to try and handle future people pressures on Banff. And the provincial government, says Cooke, is in the throes of developing finer guidelines for the Eastern Slopes in the form of detailed management policies for every area from the U.S. border to the Willmore Wilderness.

Bryan Targett is also concerned about the future of the Eastern Slopes and how

government will face up to the steadily increasing demands on the beautiful and sensitive area.

So far, he feels the government has done a good job and he's alert to the problem of making sure it continues to deal effectively with environmental problems in the future.

"I just hope that the government doesn't start giving in to lobby pressures from anybody 10 or 15 years down the road and change what has been a good game plan.

"I guess it's up to Albertans to make sure they don't."

Muriel Stringer

Red Deer . . .

where farmers and industry
are locking horns.



Seeding, Red Deer area.

Among the inhabitants of the Red Deer planning area, love of the land is apparent. Their concern for the environment, however, isn't always expressed in ways that are necessarily for the common good or even in the users' own long-term best interests.

Utilization of privately owned land is one problem pin-pointed by Eric Vuori, a habitat protection biologist with the fish and wildlife division of Alberta Energy and Natural Resources in Red Deer.

"Most land in the central region is privately owned. Since the early 1950s, there's been an increasing amount of tree removal and bush clearance to make way for agriculture. This has led to a loss of habitat space for pheasant populations. Distribution of deer has also changed. Then, too, it seems likely that factors such as increase in fertilizer run-off due to the expansion of agriculture will be affecting the environment in a variety of ways."

As might be expected, the sporting set aren't too happy but as Vuori points out, "There are probably as many views on this

as there are people in Red Deer County."

The solution to this subtle but continuing problem isn't easy to see and he feels it would not be reasonable to expect the farmer to stop clearing his land simply to preserve wildlife habitats. Not only is it to his advantage to put more ground under the plough but these days it's becoming more and more of a necessity as the costs of farming escalate. The fish and wildlife division, however, has recently tried another plan.

"We're just completed a three-year incentive program. With the current taxation system, the farmer is taxed according to the potential his land has to produce crops, regardless of whether it's covered in scrub or wheat. This means that if he has some really top-class soil that hasn't been cleared and put into crops, he'll be taxed as if it were, even though it's bringing him in little or no money. In our experiment, we paid the land taxes for a number of farmers to encourage them to leave part of their land uncleared."

It seems, then, that a change in the tax base is the answer to this particular problem, and Vuori says fish and game clubs in

the area are lobbying to have such changes made.

But everyone nowadays wants to own his own potato patch, even though potato cultivation may be the farthest thing from his mind when he puts out the money for his personalized piece of the province.

Lakeshore subdivision is another contentious issue in the Red Deer planning area, especially in regions around Pine Lake and Sylvan Lake.

"There are a very limited number of recreational lakes. Every time there's another subdivision and more cottages put up, it reduces public access to recreational use of the water. What's really needed is a series of overall studies to establish upper limits to development of this kind," says Vuori.

In the meantime, lakeside cottagers — sometimes unwittingly — create less obvious difficulties for other users. For example, very heavy removal of weeds by residents round Pigeon Lake a number of years ago adversely affected the fish populations.

"It destroyed the breeding grounds of many species of fish, especially pike and

Combining, Red Deer area.

perch. They're probably still slowly recovering now."

Running water elsewhere in the area is another source of possible future conflict, with the Dickson Dam on the Red Deer River scheduled to become operational in the fall of 1983. This may develop into an important recreational facility but the most apparent benefit is expected to be the assurance of a higher and more regular flow, which would ensure better dilution of the sewage entering the river and the maintenance of an adequate oxygen supply for the fish. But the pay-off in improvement of the environment may be short-lived, and in fact the availability of a better water supply may attract elements that will be ultimately far more detrimental to land, water, and air quality alike. As industry grows in the region east of Red Deer, and gas and coal processing plants make heavy demands on the water, we may, as Vuori puts it, "be no better off twenty years hence than we are now."

Right now, though, some of the landowners in the area are facing a much more immediate problem. Change for them already looms threateningly on the horizon and the issue is not merely one of the loss of a pleasant day's sport or an afternoon on the water. They are squaring up to the prospect of the upheaval of their entire way of life and perhaps even an abrupt end to their livelihood.

Bob Pocock, who farms about 13 kilometres south of Lacombe, is also secretary/treasurer of PAL, a society of about 150 families formed last July to Preserve Agricultural Land.

For Pocock and his fellow-members, the big battle on the books is the Union Carbide plant which may be constructed in the Joffre-Prentiss area.

"When we found out that somebody was buying up land around there, we began to worry. We've put a lot of work into preparing a brief which we presented at the ERCB hearings earlier this year. PAL isn't against industry coming into the province but we are very much opposed to good agricultural land being used up in the process."



Union Carbide has bought 14 quarter sections near Joffre, and an alternate plan presented by PAL to site the plant on Crown land near Alix has not met with success, although the people of Alix were themselves in favor of it and the construction and access to the plant would not have entailed the destruction of prime farmland. Pocock says the company felt the railway line was on the "wrong" side at the Alix site, and it would have cost \$50 million more to build there. He's sceptical of their arguments, though, and points out that the \$8 million figure quoted for levelling the ground assumed that the whole area would require grading, an assumption which he feels is not valid.

According to Miles Russell, Union Carbide's manager for business and resource development, the company has made a big effort to determine and respond to the concerns of the local people, although its findings indicate that the proposed Alix site is clearly unsuitable.

"We invited people to meet with us even before the ERCB hearings. We're very willing to listen to and address their concerns. Unfortunately, the plant at Alix would have been in the middle of an area ripe for development in open-pit coal mining. Also, we have to be within reasonable distance of the feedstock — and that means being near to Alberta Gas Ethylene at Joffre."

But with Linda Duncan, a lawyer from Edmonton, and David Estrin, Canada's top environmental lawyer, to help them, PAL is

a force to be reckoned with, and even now Union Carbide is finding difficulty in building a paved road out to its preferred site.

"Some of the farmers won't sell the land and Union Carbide doesn't have time to go through the expropriation processes so the County says they'll have to make the road 19.8 metres wide in some parts instead of the normal 33 metres. But this means those sections will have very steep shoulders so farmers will have a lot of trouble getting large pieces of machinery into their fields. The real point, though, is that they're out there building that road six days a week before the ERCB has even come back with its ruling."

Russell admits that Union Carbide has jumped the gun, although he's confident that the ERCB recommendation will be in the company's favor.

"The schedule for the whole project is pretty tight now because we had to do a complete environmental impact study. That delayed us about two months. We're committed to paying for feedstock from Alberta Gas Ethylene in the first quarter of 1984 whether we're ready to use it or not, so we have to push ahead."

Pocock says Union Carbide is 75 per cent American owned, and only half a per cent is owned by Albertans, although 90 per cent of the product — ethylene — would leave the province. For him and the other PAL members, though, the issue is less one of foreign ownership than of the loss of



Boating, Sylvan Lake

land, destruction and pollution of the environment, and the disruption of a way of life they value.

"Industry has already destroyed this community. There's distrust, and neighbor against neighbor."

Air pollution, although a somewhat lesser concern, should have been brought up at the ERCB hearings, he reckons.

"Some ethylene will be vented, and the effects on crops and livestock are not likely to be negligible. For example, what's going to be the effect of a combination of ethylene with broad-leaved herbicides on sensitive crops such as sunflowers? Then, too, we've had white muscle disease in cattle down here for several years. Esso's only just beginning to look into that now. The fact that Union Carbide is willing to support the Charlie Ellis Bluebird Farm on its proposed site doesn't mean it's concerned about the environment — that's just public relations. It doesn't help the farmers at all."

Overall, though, Union Carbide believes it is dealing fairly with the farmer, both with respect to land consumption and to potential pollution.

"Our plant won't create environmental problems," says Russell. "We're intending to use very little top quality agricultural land. The Class III land we plan to occupy is mostly low-lying and has salt-accumulation problems — it isn't much good for agriculture anyway. Then, too, we're committed to upgrading land of a poorer quality to match

in quantity any high-grade land we build on. . . And any topsoil we remove will be banked and used for crop production or seeded in grass."

Russell maintains that the company doesn't and won't have a bad relationship with the local people. There will be, he explains, a full-time staff member at Union Carbide whose job it will be to hear complaints and to initiate appropriate action. However, Pocock is much less optimistic and advises groups faced with similar battles to hire quality legal help right from the outset and to pay for the best expert witnesses.

That's a strategy that might well be followed by Harley Michael and the other members of HOPE, the Heatburg Organization to Protect the Environment, which was set up about a year ago.

Born and raised a farmer in the area, Michael, along with his 75 colleagues, is strongly opposed to Fording Coal's proposal to start mining around Heatburg in 1990. His objections are based on two major concerns.

"We're worried about the effects the mining will have on the aquifers in the area. The government has already admitted that the coal removal could affect water supplies as far away as Hardisty."

Since coal is itself an excellent aquifer or water-holding body, it seems inevitable that its removal will deplete the ground-water supplies in the area.

Even more important to the farmer, how-

ever, is the direct impact on the land itself. According to Michael, the Surface Rights Act doesn't even pay superficial attention to the rights of the farmer. Right of entry on to a farmer's property can be granted to a mining company, with the owner of the land having no way of appealing the decision.

"I'd have no say at all in the sale of my land. If I refused to sell, the Surface Rights Board could grant right-of-entry in seven days. They'd even set what payment I was supposed to get, and I might not get the money for a year after I'd been pushed off my own farm. The Surface Rights Act was written to take into account oil extraction, not coal — that's a much bigger impact on the land. The Act's going to be revised, I think, but right now we have absolutely no protection."

So far, the estimate is that 4,800 hectares of farm land would be lost to the mining operation alone but HOPE reckons that, including the plant site to convert the coal, and the access roads, the loss would be nearer 8,000 hectares.

"And I've yet to see any evidence that a mining company can restore the land to crop-production after it's finished with it."

Michael has looked elsewhere in the province and has seen a very bleak outcome for others faced with a similar plight.

"Look what happened to the people at Genessee. The payment they got for their land was far too little to allow them to start up farming anywhere else. Some of them ended up working for the coal-mining company."

For both PAL and HOPE, the fight to preserve agricultural land and a rural way of life has necessitated an enormous time commitment beyond the normal day's work. There has been a time-consuming and painstaking accumulation of information, and a dogged entrenchment to make sure their concerns are heard. But farmers are relatively few in number and they have, as Pocock points out, "a small — and dwindling — voice in politics."

Muriel Stringer is an Edmonton freelance writer

Alberta Government Photo

Muriel Stringer

Battle River . . .

where residents "aren't about to let somebody come in and muck the place up."



Unlike their neighbors to the south, the residents of the Battle River planning area are not yet, contrary to the name of their region, an especially militant group on environmental issues. This doesn't mean, however, that they're not aware of changes taking place and the effects these may have on their surroundings and way of life.

"We're a pretty quiet, self-contained set of people all round," says Robert Botham, director of the Battle River Regional Planning Commission. "But we do keep a close eye on things being done to the landscape that might affect us. Acid rain is a concern at the moment. Looking at the haze over Edmonton on the horizon, it's hard not to keep that in mind. And every time we see a new stack go up in our own area, concern mounts. But on the whole, we look on development as a balanced risk, with the positive effects of growth offset by possible negative ones. Overall, though, we feel we're in a positive phase of growth that's likely to continue and we believe we can keep control over any negative effects."

Emissions from gas plants are, nevertheless, a valid and growing concern, particularly in the New Norway and Duhamel areas. The cumulative impact of and increase in acid precipitation worry the farming communities and the City of Camrose alike.

"There are about five or six plants around there as well as a couple of big ones west of Stettler," explains Doug Drysdale, public health inspector for the Alberta East Central health unit. "And people aren't too happy about the sulphur stock piles south of Camrose, either." When the ERCB held hearings earlier this year, some of the farmers raised questions about the effects of discharging flared gas from the new plant Panther Resources was proposing to put in. Representatives of the City of Camrose were querying the possible long-term effects of output from the plant, too.

Panther Resources have indicated they will adhere to provincial emission standards but there seems to be a wariness, as expressed by Drysdale: "What's the good of that if the



standards aren't enforced? Look what happened at Syncrude."

Botham, on the other hand, believes that the impact of industry so far has been relatively small, although he suggests that the possibility of pipeline ruptures and gas leaks is a lingering concern since an incident at New Norway a few years ago.

"There was a leak of sour gas or hydrogen sulphide near the town and we had to evacuate the place," says Stan Harbin, district officer for Alberta Disaster Services. "But that was quite a while ago and to my knowledge that's been the only incident of its kind in recent years."

Of much more immediate importance are the fears that another type of gas may cause a striking and very unwelcome impact on the City of Wetaskiwin. Haulage of propane and fears of an accident in the shunting yards are real problems for at least some of the residents. There is, as Botham puts it, a "silent concern" over possible danger of the current practice of moving the gas by rail from its manufacturing source in Hardisty.

Wetaskiwin, situated as it is at the intersection of the main north-south and east-west railway lines, experiences a good deal

of rail traffic and activity in the switching yards is extensive.

"We've had quite a number of derailments in the yards already," admits Bert Enman, City engineer, "but until recently none of them involved propane tankers. Then back about the middle of August, we did have a propane wagon go off the rails. Luckily, it didn't explode."

Enman says Disaster Services have explained the dangers of propane which can simply "go off like a cannon." Real though the danger is to the people of Wetaskiwin, Enman admits that so far he can't see any answer to the problem.

Further to the east, the inhabitants of Camrose appear to be much more concerned about a decline in the quality and quantity of water than about possible unwelcome additions to the atmosphere.

Dried Meat Lake, a long, narrow body of water, is the city's only source of supply, and public health inspector Ken Rommings points out it's already choked with weeds as a result of sewage disposal farther upstream in the Battle River which feeds into it.

Drysdale explains, "The city draws for its water on a number of wells drilled near the lake shore. The water's pumped from

Hereford cattle, New Norway
Wetaskiwin area (Page 26 and below)

the lake into the wells and goes from there through gravel beds which act as a natural filter."

The lake isn't deep, and, apart from the obvious threat to health of inhabitants of Camrose, the addition of sewage to the water is, through the growth of aquatic plants and the consequent reduction of oxygen, causing fish kill, mostly among sucker fish.

"People seem to look on these dead fish that come up as free food but I don't think that's a healthy practice, either. Basically," says Drysdale, "the problem is the size and number of communities that are using the Battle River to get rid of their sewage. Ponoka does, and so does Wetaskiwin. We do in Camrose, too, although we keep ours in storage for a year after treatment."

On the basis of the capacity of the aquifer it draws on, Camrose could theoretically support a population of 30,000. At present, it has only 12,500 people but there are serious reservations regarding the capacity of the water supply to keep up with expansion.

"Dried Meat Lake has about fifty cottages on it — that's bound to have some effect on the overall pollution load of the water. But the big question really is the commitment Alberta Environment is prepared to make to clean up the Battle River."

Eric Vuori of the fish and wildlife division of Alberta Energy and Natural Resources points out that some work on the river is already under way and that this is likely to expand in the near future as demands by industry precipitate major changes in water management.

"Hardisty may be in line for a large petrochemical plant by the year 2000. There won't be enough water to support it in all probability so we may be looking at a diversion of the North Saskatchewan River to help cope with the shortage."

Dams and diversions are no small undertaking and their effects are a source of potential problems, Drysdale suggests. He cites the dam at Forestburg as a situation needing more study.

"Alberta Power will have a thermal generating plant down there. The cooling water



agitating through the press or forming citizens' action groups. And the main industry in the city, Stelco, seems to be pretty good about keeping the environment clean. We did have a small spill of PCBs a short time ago when one of the transformers there broke but it was cleaned up very quickly on site."

One group in the Round Hill area, however, does seem to feel it must look to protecting its own rights. The Dodds-Round Hill Protection Society has been formed to look into the problems residents of the region foresee resulting from coal mining expansion.

In the main, though, Botham believes the Battle River area, while by no means a rural haven still untouched, is not yet severely affected by industrial development and its inhabitants aren't likely to get too excited until someone sets up a rather messy shop in their backyards.

"That would be a different story. We've about 60,000 people in this region. Most of them grew up here. And they're not about to let somebody come in and muck the place up."

discharged from the plant will affect fish populations and vegetation in the surrounding river. Who's going to look into that?"

Looking into things seems to be something inhabitants of Battle River are still willing to entrust to appropriately designated bodies, and there is still a good deal of faith that industry will run a clean operation and repair any damage they may do.

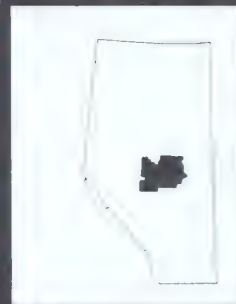
"Mostly, people in Camrose, for example, will tend to bring their concerns to the attention of the City Council rather than

Alberta Government Photo

Gail Gravelines

Edmonton . . .

where urban problems are spreading
with the city.



The newspaper ad reads: "Tired of the hustle and bustle? Escape to this peaceful treed three acres with a well-built 1,985 sq. ft., 2 storey home . . ."

It's carefully constructed to entice the beleaguered urban dweller with the benefits of country living. There's clean air, room to roam, maybe even a good spot to plant a garden. In short, the country acreage promises peace and serenity as close as 25 kilometres from the office.

In the Edmonton area the acreage is rapidly replacing the once-standard version of the single family dwelling on a 15- by 30-metre lot. But the urbanite's zeal to get back to the land is in fact a major contributing cause to the eventual destruction of agricultural lands and fish and wildlife habitats. The growing trend to escape the confines of the city raises fears among environmentalists that many urban problems such as air pollution and the paving over of prime agri-

cultural land may merely be transported to affect a larger area.

Says Sherwood Park naturalist Deirdre Griffiths: "One of my major environmental concerns in the Edmonton area is the loss of wildlife habitat as a result of growing rural subdivision and the acreage phenomenon." Concerns voiced by Griffiths and others go back to the land, population, industrial and energy demands of a growing Edmonton. And there's an overwhelming sense that the



individual or community can do little to change the nature of developments that often appear to have government approval prior to public notification.

"The annexation decision has had a tremendous impact on our human environment both in terms of settlement issues and the perceived power of people to make their own decisions," says Ron Gaunce, consultant with Alberta Social Service's family and community support services. "People

are seeing themselves as disenfranchised in the face of overwhelming growth. They're choosing not to handle any of the decision-making, thinking, why bother anyway? Cabinet or someone else is going to make the decision for them. This affects people's perspectives."

Elaine Koebernick believes her several years' work with the Genesee Agricultural Protection Society could help ease the shock rural communities undergo in the face of

industrialization. She's one member of an environmental impact assessment committee that has travelled to areas slated for industrial development, such as Bonnyville, to help explain what lies ahead for the community. Koebernick cites the environmental concerns she has for her home region since discussions of the building of the 800-megawatt plant first began.

Topping the list is her anger that some twelve quarter-sections of agricultural land will be under water. The plant requires a pond that size to support its power operation. Koebernick says the lands involved are not categorized as number one agricultural land, but are numbers two, three and four variety, yielding cereal crops.

Her list doesn't stop there. Since water testing has begun at the site this year, Koebernick says her drinking water, drawn from the area's natural artesian wells, has a muddy appearance. The cattle drink it, but the Koebernick's now find themselves hauling water. She explains the groundwater follows the coal seams and insists that when they're disturbed the water quality will also be affected.

Her other concerns? That until the local residents banded together to hire one lawyer to deal with Edmonton Power representatives, residents were not paid fair prices for their homes. That wildlife of the area will be forced out once the remaining timberstands are bulldozed. That local roads will eventually deteriorate under heavy equipment.

Above all, she fears the lifestyle chosen by the area's 65 families will be drastically altered. And when you're in your late fifties and had plans to retire there, what do you do, she asks? Koebernick still harbors doubts as to the ultimate necessity of the plant. She claims Edmonton Power could have bought their extended power needs from one of the existing power plants, and believes the eventual plan is to tie the plants to a provincial power grid serving far-flung energy interests.

But Edmonton Power representatives say that in addressing environmental concerns their organization intends to meet provincial water, land reclamation and other envi-



ronmental legislation. As for dealing with the human aspects of industrial development, they talked proudly of their organization's efforts to notify local residents of the nature of the project and to then hold public meetings.

It's Alberta's environmental legislation, though, that sparks heated criticism from some. University of Alberta professor Dennis Wighton terms provincial environment legislation "totally useless" — though he praises the work of the "lower echelon" civil servants whom he sees as being closer to environmental realities. Wighton, past coordinator of the university's interdisciplinary committee on environmental quality, believes agricultural land should be used for agriculture — and could be if planners, rather than developers, developed cities. The city could also use its tax system to encourage industrial users to recover their wastes rather than flush them into the North Saskatchewan River, says Wighton. The city's air quality is worsening and could be improved by the creation and backing of a better public transit system, he adds.

Linda Duncan of the Environmental Law Association of Alberta shares Wighton's views. She cites problems with the city's drinking water in the spring of 1979. A



spillage occurred but no one could trace it to its source. As far as Alberta's environmental legislation goes, Duncan claims the department has sat on five to ten simple, "house-keeping" legislative amendments for several years, a reflection, in her view, of this province's general reluctance to address environmental concerns. "It seems you can't fight developments for human, environmental or

aesthetic reasons," she says.

The strength of environmental legislation isn't Gloria Garratt's major concern. Her years of work with the Paddle River Headwaters Protection Association to stop the Alberta government's plan to build four dams on that river has cemented her belief that the Alberta government doesn't heed its own legislation. "The decisions are made and the



public is told. The environmental impact assessments are done after the decision to approve the project." It's a situation Garratt believes does not apply to industry projects that must first provide an environmental impact assessment before winning government approval. Although the plan has been cut back from four dams to only one, Garratt says she is concerned about the safety of

building the Site 7 dam on soil prone to easy movement, and about the effects of rising and falling water levels on the wildlife, particularly birds, in the area. She also sees the project as a potential eyesore. Garratt insists channelling and dyking would control the flooding problem as effectively as the dam, but attributes its building to a former election promise by then-MLA Dr. Hugh

Horner. The former Environment Conservation Authority had supported Garratt's group's contentions in the mid-seventies, but soon found itself out of the picture when the Energy Resources Conservation Board (ERCB) took over its assessment functions.

Concern for inter-government reporting responsibilities regarding environmental questions is Lucien Royer's focus. The president of the Edmonton Voters' Association (EVA) is determined that a mechanism must be created to inform Edmonton officials of any environmental infractions and the general quality of the water and air. He claims the City of Edmonton itself failed to meet provincial requirements regarding the reporting of and the quality of the city's drinking water over a three-year period. His main concern is that until his group asked Council for that information no one knew of the failure.

Another area EVA would like investigated is the determination of discharge levels into the North Saskatchewan River by the city itself. It's Royer's contention that city operations violate regulations. The preservation of agricultural land, particularly now that Edmonton has annexed so much of it, is also a prime EVA consideration.

Amid discussions of particular environmental concerns, the problems of increasing acreage developments were often cited. Biologist Beth MacCallum of Alberta Energy and Natural Resources fish and wildlife division boils it down to the fact that private lands don't fall under general environmental legislation. Trees, home to bird species, can be removed; larger animals find it difficult to live amidst human settlements and, of course, agricultural land is gobbled by what is increasingly becoming a population of city workers fleeing the urban areas.

Jim Visser, representative of TOPSOIL, standing for "To Please Save Our Agricultural Land," quips that he worries little about the effects of acid rain, because "what's the use of worrying about acid rain when they're going to pave over your land?" His organization formed following the June announcement that Edmonton would annex lands

Pump in field, Calmar-Leduc area (top);
Edmonton, from Capital City Park (centre);
Calgary Power, Wabamun (below).



formerly northeast of the city's limits. Their hopes? To encourage planners to appreciate agricultural lands and to save them from acreage or subdivision development.

Surprisingly, the industrial concentration in Fort Saskatchewan was rarely pinpointed as causing any environmental concern. Says Alberta Environment public participation officer Bill Diepeveen: "People are perhaps accustomed to industrial development in the area. As yet there is no adverse reaction to it, or no strong voice against it." The people of Fort Saskatchewan did, however raise a loud objection two years ago when Kinetic Contaminants raised the possibility of developing a hazardous wastes disposal operation in the area. Anke Seifried, of Alberta Environment says public response to such a project has changed drastically. She reports the Hazardous Waste team continues to search out appropriate sites, but says they will enter an area only by invitation of the local council. The team has received thirty such invitations so far, and Seifried says a series of public meetings addressing concerns ranging from the safety of such an operation to the effects of increased truck traffic and economic impacts has helped to change public opinion.

Underlying many of the environmental concerns cited in the Edmonton area was the reluctant acknowledgment that the days of rallying to the aid of the environment may be just a fading memory. Dennis Wighton reports the inter-disciplinary committee on environmental quality at the U of A has disbanded. Linda Duncan formerly headed the Canadian Bar Association's Environmental Law Committee. It too has disbanded. And although Edmonton Chamber of Commerce general manager Jack Chesney was quick to offer hopes that the air be kept pure, the streets safe, quality of life protected, and agricultural lands conserved, his organization's environmental committee has also disintegrated. They're now addressing energy issues.

Gail Gravelines is an Edmonton freelance writer

Student/Teacher Guide: Environmental Issues In Alberta

This guide accompanies *Environment Views* Volume Four, Number Four.

Prepared by Susan Washington, environmental education co-ordinator for Alberta Environment,
and Doug Ramsay, social studies department head, Queen Elizabeth Junior/Senior High School,
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"By their own follies they perished, the fools."

Homer — *The Odyssey*

NOTE TO TEACHERS

This issue of *Environment Views* can be used by teachers and students as a starting point for an in-depth study of the particular region in which they live. In the section Research Questions for Further Study, suggestions are presented for the compiling of an up-to-date file on environmental problems in the student's home region and/or province.

We anticipate this issue will be of particular interest to you and your students as it presents regional environmental concerns as seen by residents of Alberta, local decision-makers, environmentalists and provincial government officials. We welcome your comments, criticisms and suggestions on the usefulness of the magazine for the classroom. Please address your concerns to:

Environmental Education Co-ordinator
Alberta Environment
9820 - 106 Street
Edmonton, Alberta T5K 2J6

RELATIONSHIP TO CURRICULUM

Social Studies:

The topic of Alberta's regional environmental concerns does not fit directly into the high school Social Studies curriculum. However, the issue of environmental problems in Alberta is an important one and can be used in the following areas:

- a) Social Studies 9, Topic C — Industrialization in Canada
 - The need for industrial development in Alberta vs. the need for the preservation of Alberta's natural environment.
- b) Social Studies 10, Topic A — Human Rights



- Individual rights vs. the greater needs of society (such as land-use conflicts).

c) Social Studies 20, Topic B — Global Problems of Population and Resource Development

- Present and projected world food and energy shortages vs. energy needs of Alberta.

GENERAL STUDY ISSUES

Social Studies:

- To what extent should environmental and social concerns be considered when industrial or resource development is required or desired?
- To what extent should the Alberta government be concerned in protecting the environment?
- What government policy should be established —
 - a) present economic growth and development?
 - b) conservation for the future?
 - c) balance between conservation and development?
- Are individual rights more important than the "common good"?

Science:

- Can science and technology provide adequate solutions to environmental problems in Alberta?
- What are the effects of global needs on the future of Alberta's non-renewable resources?

QUESTIONS ON ARTICLES

Southeast

1. In outline form explain what problems have occurred in Medicine Hat concerning the upstream pollution of the Bow River, then describe attempted solutions.
2. Why has there not been any opposition to the off-stream reservoir at Forty-Mile Coulee Creek?
3. "... There are other environmental problems that are giving them concern." Outline each of the following concerns:

- a) land reclamation;
 - b) overuse of land;
 - c) Suffield Military Experimental Range;
 - d) air pollution (Medicine Hat);
 - e) sewage system (Brooks).
4. Does the Southeast region have serious environmental problems? Why, or why not?

Oldman River

1. How does irrigation and the natural restrictions affect the water supply in this area?
2. Describe the three basic arguments against irrigation.
3. With the promise of more irrigation from the Alberta government, why did the selection of a dam and reservoir site northwest of Pincher Creek "cause the most bitterness" among:
 - a) dryland farmers;
 - b) fish and wildlife organizations;
 - c) native groups;
 - d) archeological historians?
4. In your opinion, how far should individuals (such as those who would lose land in an irrigation project) be forced to go in providing for the common good?
5. What environmental problems may arise from an irrigation project?
6. Explain the statement, "Overall, residents of the Oldman River region seem less concerned with possible environmental problems than with economic benefits."
7. Define "subsidence." Where is it a problem?
8. Explain the other environmental concerns in the Crowsnest Pass area.
9. What advantages are there for landowners when annual rather than lump sum payments are made for access to their land?
10. What health problems seem to be associated with the operation of gas plants in the Pincher Creek area?
11. Does the Oldman River region have serious environmental problems? Why, or why not?

Teacher Note: Environment Views Vol. 3, No. 3, Water Resources Management: 2 is an excellent supplement to a study of the Oldman River region.





Palliser

1. Outline three features of the Palliser region.
2. What's the major environmental issue in the area?
3. Explain in a short essay what the provincial government is doing to solve the water shortage problem.
4. The Palliser Regional Planning Commission noted some drawbacks to the proposed water projects. What are the drawbacks?
5. What benefits are the people looking forward to from the Sheerness strip mine and power generating plant project?
6. The City of Drumheller also has a water problem. Explain.
7. Do you think the Palliser area has serious environmental problems? Why, or why not?
8. The Kroeger commission is currently studying inter-basin water transfer. List the potential benefits for the province, in particular the Palliser region, of inter-basin water transfer. Once you have done this itemized list, work through the benefits again, listing potential ecological and social concerns for each category you think should be researched before inter-basin water transfer goes ahead.

Calgary

1. Explain the problems associated with the pollution of the Bow River.
2. What are the major sources of noise pollution in Calgary?
3. Why are environmentalists concerned with the proposed Esso Quirk Creek sour gas plant?
4. Describe the two areas in the region that have had problems with the misuse of herbicides.
5. The City of Calgary has a number of other environmental concerns. Explain the following:
 - a) air pollution;
 - b) disposal of hazardous wastes;
 - c) annexation;
 - d) land use planning;
 - e) access to the Bow River.
6. Does the Calgary region have serious environmental problems? Why, or why not?

Eastern Slopes

1. "The main environmental problem plaguing Alberta's Eastern Slopes can be summed up in one word: people." Explain.
2. Describe the Policy for Resource Management of the Eastern Slopes.
3. Outline the environmental problems that have occurred because of increasing activity by oil and gas companies.
4. What has happened to the Kananaskis area? Explain the conflict over recreational use.
5. List the arguments in favor of the proposed Odyssey resort and then list arguments against it. As a class discuss the pros and cons of this type of development.
6. How far do you think the government should go in allowing:
 - a) recreational development;
 - b) resource development?
7. Do the Eastern Slopes have serious environmental problems? Why, or why not?

Red Deer

1. Explain the problem of utilization of privately owned land.
2. What solution is being proposed by the fish and wildlife division?
3. What problems are associated with lakeshore subdivisions?
4. Explain the statement, "Running water elsewhere in the area is another source of possible future conflict."
5. There is an immediate problem for landowners in the Red Deer area. What is it?
6. Outline the social and environmental problems that could occur if Union Carbide constructs an ethylene plant near Alix.
7. What is Union Carbide's response to the criticism about the potential environmental problems?
8. Describe the concerns over the proposed coal mine near Heatburg.
9. Is the Surface Rights Act any use to farmers in this situation? Why, or why not?
10. Does the Red Deer region have serious environmental problems? Why, or why not?

Battle River

1. How would you describe the attitude of the Battle River Regional Planning Commission towards environmental concerns? In your opinion is their view realistic or not?
2. What is meant by the statement, "Emissions from gas plants are, nevertheless a valid and growing concern"
3. The city of Wetaskiwin faces an immediate problem. What is it?
4. Camrose is concerned about water. Outline the problem.
5. Although the Battle River cleanup has begun, what future projects could lead to more environmental problems?
6. Describe the steps people in the Dodds-Roundhill area have taken to protect their rights.
7. Does the Battle River region have serious environmental problems? Why, or why not?

Edmonton

1. Explain in outline form land use and associated problems with growing interest in acreage development around Edmonton.
2. What is meant by the statement, "The annexation decision has had a tremendous impact on our human environment both in terms of settlement issues and the perceived power of the people to make their own decisions."
3. Why are environmentalists concerned that developments often appear to have government approval prior to public notification?
4. What are the environmental concerns that the Genesee Agricultural Protection Society forsee for communities undergoing industrialization? In your opinion, are these concerns representative of the environmental concerns of rural Edmontonians?
5. University of Alberta professor Dennis Wighton states that provincial environmental legislation is "totally useless." What is the basis of his conclusion?
6. The Edmonton region has a number of environmental concerns. Explain the following:
 - a) water quality;
 - b) air quality;
 - c) declining public interest in environmental concerns;
 - d) agricultural land.
7. Does the Edmonton region have serious environmental problems? Why, or why not?

Peace River Region

1. Why does the writer say a farmer ploughing his field may be more destructive to the environment than an oil pipeline leak?
2. Describe the boundaries of the Peace River region.
3. Explain, in detail, the threat of sulphur oxides and the threat of hydrogen sulphide (sour gas).
4. Why is using lime to raise the pH levels considered to be a short-term solution?
5. Outline the environmental concerns over the following:
 - a) heavy use of herbicides;
 - b) proposed construction of a major dam;
 - c) logging roads.
6. Explain the statement by Brian Staszewski that "... environmentalists are hampered by insufficient information to identify critical wildlife habitats."
7. Why is water quality an issue throughout this area?
8. Are pulp mill wastes harmful or only "colorful"?
9. What are the advantages and disadvantages of the Peace River region "boom" and "bust" economy of recent times?
10. Does the Peace River region have serious environmental problems? Why, or why not?

The North

1. The northern part of Alberta has several environmental concerns. Explain the following:
 - a) water;
 - b) agriculture;
 - c) wildlife;
 - d) human environment.
2. In a 200-word essay describe the major "friction points" in the north.
3. Why is it now considered uneconomic by some to farm in the north? Is this view changing? In your opinion is this in Alberta's best long-range interests? Why, or why not?

RESEARCH QUESTIONS FOR FURTHER STUDY

General Questions for Students:

1. Make a list of words (particularly government boards, etc) and be sure you can define each one.
2. Draw a map of Alberta showing each of the regional planning districts. Include major geographic features and major cities and towns.

Overall View:

1. Complete a chart similar to the one below.

Planning Region	Today's Environmental Problems	Solutions	Future Environmental Problems

Essays/Research Papers:

1. Assess the environmental problems in Alberta and determine which ones you believe are serious to-day and which ones may become serious in future.
2. Keep an up-to-date file of articles dealing with environmental problems in your region. (Your library may have a recent collection you could use as a starting point.) Then, after a few months, write your own article on the present situation in your region.
3. How similar (and different) are the environmental concerns of Albertans? Write a 300-word essay on this topic.
4. Write a 400-word essay on one environmental problem that has been caused by development in your region. Be sure to outline the various points of view and then take a stand on the issue.



Maryhelen Vicars

Peace River . . .

where protecting soil quality is the big concern.

When an oil pipeline broke where it crossed Sweathouse Creek east of Valleyview last winter, some two hundred thousand barrels of oil spilled, covering the creek to a depth of 30 centimetres for about three kilometres downstream.

The oil had to be burned off, destroying the underbrush and many of the trees. It was not a pretty sight.

No one likes to see these things happen, of course, but such messy and dramatic incidents are not the greatest threat facing the natural and human environment in the Peace River region.

In the long term, a farmer ploughing his field or a construction crew cutting a road into the bush may be far more destructive.

In another year Sweathouse Creek will bear few signs of last winter's inferno. In fact, it may be an even better habitat for some kinds of wildlife, as the bush will be a little more open and the young, lush vegetation will provide even better forage.

But the soil which is lost by being exposed to the destructive forces of wind and rain by the farmer and the roadbuilders can never be reclaimed.

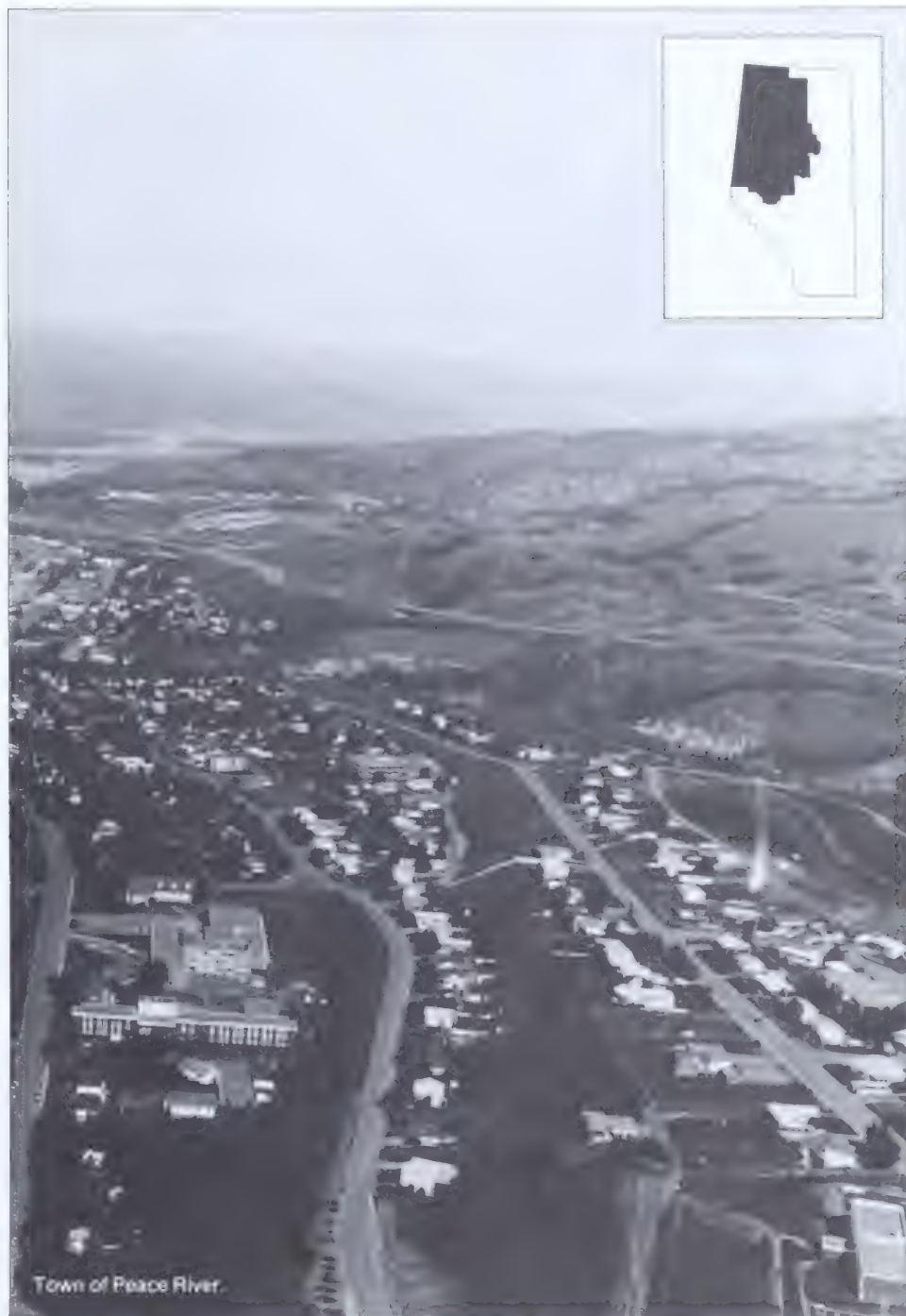
It will be washed into streams and rivers, causing siltation damage to fish habitats and spawning grounds and eventually find its way to the Mackenzie Delta. The soil left behind, once stripped of much of its topsoil, will be much less able to support either crops or forage for wildlife.

Building quality soil takes many many years; destroying it can take one season.

For this reason, protecting soil quality emerges as the most pressing environmental concern in this huge district, which stretches from the Willmore Wilderness Park and Lesser Slave Lake in the south, to Peerless Lake in the east, to the B.C. and NWT borders on the west and north.

Both soil and water resources in the region are threatened by the increase in recent years of sulphur dioxide pollution from oil and gas plants.

The threat takes the form of sulphur oxides (which combine with water to form acids) deposited on the soil and washed into



Town of Peace River.

streams and lakes.

Biologist Knut Moller of the fish and wildlife division of Alberta Energy and Natural Resources explains that both vegetation and animal life — fish in the lakes and streams, for example — thrive at a given pH (the acid-alkaline balance). If that drops, vegetation becomes more susceptible to disease and if the pH of the soil drops low enough, both natural vegetation and food crops will be destroyed.

Much of the agricultural land in the region is already acid; there is little natural buffer to protect it from the acid effects of the sulphur emissions.

Throughout the region, local farmers' groups and surface rights organizations are showing their concern by pressing for better

recovery of sulphur-containing byproducts.

Sexsmith farmer Don Liland, a former Alberta Environment engineer, says farmers are also concerned about hydrogen sulphide — sour gas — which is flared off at processing plants.

Liland says flares frequently malfunction, allowing the deadly gas to escape. He says there have been a number of reports of cattle or wildlife found dead near the site of sour gas accidents, although it is difficult to prove the gas is responsible.

"It's not very nice living next to these sites, especially if you have kids."

He says farmers would like to see this gas tapped for distribution rather than being flared. While it is not considered economically feasible to do so now, Liland says there



Dunvegan Bridge. Peace River.

is more to the question than just the price the gas might fetch, including the long-term impact on the soil and on the rest of the economy.

The provincial government offers a freight subsidy to farmers needing to bring in lime from southern Alberta to raise the pH of their soil, but farmers see this as a short-term solution at best.

The Christian Farmers' Federation, which has several locals in the region, encourages its members to use "stewardly" farming practices — to conserve, rather than exploit, the soil quality.

John Kolkman, the federation's research and policy co-ordinator, says, "Sometimes I think we have forgotten a little the lessons of the Thirties. Sometimes we want to take the shortest path with the minimum amount of work."

As a result, he says, too many farmers

are not careful enough to use contour cultivation, inhibiting runoff. This is a growing concern, especially in the Grande Prairie-La Glace area, he says.

The federation is also conscious of the problem of nutrient depletion and encourages practices which tend to maintain or improve the organic content of the soil, such as crop rotation and the use of green manuring as an alternative to summer fallow.

Miles Kurvial, senior district agriculturalist at Grande Prairie, conceded there is "room for improvement" in area farming practices, and sees continuing education as one solution.

Land use is a big issue throughout the area, as farmers compete with oil and gas companies for the land, and, near cities, with housing and industrial development. The wildlife, in turn, is competing with all of man's interests in the land.

Sloughs are drained to provide more pasture and fields are cleared right to the borders of lakes and streams, destroying cover for small animals and nesting sites for waterfowl. There is concern about the long-term effect of the use of agricultural chemicals, particularly herbicides.

It's a delicate issue, says Gerald Lundgard of the Peace River branch of the Alberta Fish and Game Association. While the members are concerned about the threat to wildlife, they recognize the cost to the farmer of not making the most of the land.

"We don't like to see (heavy use of herbicides) but we like to eat. The farmer's not going to take a cut in income to please the fish and game association."

The proposed construction of a major dam on the Peace River at Dunvegan is viewed with alarm by environmentalists who fear the destruction of the winter habitat of such species as moose, white tail deer and mule deer.

Logging practices are closely regulated to minimize erosion and siltation of streams, but as with oil and gas activity, the roads built to reach the site can cause more problems than the activity itself.

Roads cut through the bush for such purposes also provide public access to the wilderness, which can mean a host of other problems. Four-wheel-drive and all-terrain vehicles can damage soil and vegetation and carry humans deep into the wilderness. The subsequent harassment of animals is a particularly serious problem during nesting and breeding season.

The proliferation of roads also makes the perennial problem of out-of-season hunting more difficult to control.

The issue of access is a two-sided coin, however. High Level town councillor Joanne Mitchell says people in that area want roads built to nearby lakes to provide needed recreation for a growing population.

Martha Kostuch, a member of the Environment Council of Alberta's public advisory committee, says there is also concern that when Crown lands are leased, the public loses access to them, even for such pur-



Confluence of Peace and Smoky Rivers (top);
Logging for Proctor and Gamble pulp mill
(below)

poses as hiking.

"We shouldn't completely close public access to public land but we should be able to control the type of access. We can't allow use which would destroy the value public land has," she says.

Brian Staszewski of the Alberta Wilderness Association says environmentalists are hampered by insufficient information to identify critical wildlife habitats.

If it were known, for example, just which areas were critical to the continued survival of caribou, access to those areas could be blocked and other areas opened up, he suggests.

Staszewski believes that roads necessary for development need not provide potentially destructive recreational access.

"Some companies like Gulf and Shell have done a good job of closing off an area when their development was finished."

Although companies may be willing to recontour and reseed former roadways, they are often reluctant to declare their interest in the site completely finished. The solution in these cases, he says, is to require temporary gates or berms.

The all-terrain vehicle problem is a relatively new one in the region, and it is not limited to the wilderness areas. In the river valleys, four-wheel-drives and trail bikes do a lot of soil damage, especially in the spring when the snow has left and the ground is soft.

Water quality is an issue throughout the area. Streams which were once clear and supported a good fish population have become murky and silt-laden.

Says Ron Bjorge, fish and wildlife division biologist in Grande Prairie: "All streams are vulnerable. Wherever there is an increase in activity, there is increasing concern."

Moller says that as industrial activity increases, more stringent regulation and enforcement of water quality standards are needed, along with improved public awareness.

"We must make the public more aware of what they might be losing. Maybe the public doesn't want clean rivers — I'd like to



think it does. But are we willing to pay the higher costs of a clean and decent environment?"

The public is very aware of at least one glaring example of water pollution. The Wapiti and Smoky Rivers downstream from the Proctor and Gamble pulp mill at Grande Prairie are black from the effluent they carry.

Especially in late summer when the Peace River, normally silty, is low and clear, the effluent is only too obvious, and everyone complains.

The town of Peace River recently moved its water intake when low water caused the town's water supply to be coloured by pulp mill wastes.

But Eric Jerrard, Proctor and Gamble spokesman, says the problem is entirely an esthetic one. He says the mill is trying to discover ways to reduce the color problem, but that the effluent is closely monitored

and has been found to be completely harmless to fish or other life in the Wapiti and Smoky Rivers.

Until recent political decisions brought a sudden — if temporary — end to oil and gas exploration, the region was experiencing the full impact of a boom economy, with a transient population, a severe housing shortage and all the social pressures related to these conditions.

Grande Prairie Chamber of Commerce president Don Lowrie concedes that the town was having problems coping with growth that was too fast, but he notes somewhat ruefully that relief from the pressure has taken the form of a "pendulum swing." He and other businessmen are hopeful that the setback is only temporary.

"It would have been better if the growth had tapered off gradually . . ."

Maryhelen Vicars is an Edmonton freelance writer

Susan Mayse

The North . . .

where resource development and a population boom challenge the province's "last frontier."



Alberta's "last frontier" in 1981 spans the province's vast, scarcely-known north-eastern region.

Frontiers of the past normally saw slow development, as farmers methodically broke the soil and industries exploited new resources with labor-intensive early technology.

Today in northern Alberta, advanced-technology industry is throwing the country open faster than human settlement can follow. The reason? Critical worldwide need for energy, and the area's abundant petrochemical resources.

Northern Alberta is a watery landscape, meshed with river systems, splashed with countless lakes, and sluicing with hidden groundwater. As a result, environmental damage or fears often flow with the water sources in one way or another. Air quality, noise pollution, and soil abuse are less frequently cited as problems than they are in the populous, developed south.

Friction and open conflict also occur on a smaller scale between existing and emerging concerns — agriculture, wildlife, recreation, and the human environment — yet the most-affected resource remains water.

"One of the current concerns we have is water use by heavy oil extraction operations using steam injection methods," says Blair Rippin, regional wildlife biologist for Alberta Energy and Natural Resources in St. Paul.

Such methods require a great deal of water to create steam for transporting and processing oil, and oil companies propose to draw the water from northern Alberta lakes and groundwater sources, since relatively few major river systems flow through the affected areas.

Producing and pilot plants have already diverted water from lakes in the Fort McMurray area and from Cold Lake. Other proposals base their operations on water drawn from Ethyl Lake (Esso), Muriel Lake (PetroCan), and groundwater sources north of Bonnyville (Dome). Other applications are "in the wind."

"The oil industry is booming in this part of the country — it's fairly localized, but on the broad scale. It has far-ranging effects,"



says Rippin. "It's certainly changing the landscape and access — whether the effect is detrimental has yet to be seen."

Huge tailings ponds, now in use at Fort McMurray, carry the hazard of eventual overflow into the Athabasca River, with the potential for damage to the water system and local wildlife. Water use for heavy oil extraction also affects both the water resource itself and dependent wildlife. Removal of water can lower or raise a system's water

levels, and interrupts the flow through the system.

Concern about industrial water use led to Energy and Natural Resources' present Beaver River Basin Water Resources Study "to determine what water we have, the flow rates in various systems, possible water sources for use in heavy oil extraction, and the effects of extraction."

The study, due for completion in 1982, covers an area roughly 100 kilometres square



Syncrude oil sands plant (Page 36).
New construction, Fort McMurray (left).

stretching east of Lac la Biche and into Saskatchewan.

"This is the lakeland district of Alberta, and we're short of lakes," says Elmer Kure of the Alberta Fish and Game Association. "It lends itself to all kinds of tourist services. We've always concentrated far too much on the mountain regions."

"The big danger is that if we keep stacking up our heavy oil plants and SO₂ fallout (acid rain), we're going to lose these habi-

tats. We seem reluctant to believe the Scandinavian countries have almost lost their lakes and their fish, and the same thing is rapidly happening in eastern Canada."

Oil companies promise to treat affected lakes with lime, he says, "but that's easier said than done, and may not be possible at all."

Acid-affected water in a solid container can easily be treated, but longterm leaching through spongy lakeshores could mean lime

would have to be applied on a perpetual-treatment basis.

The Alberta Fish and Game Association opposed drawing water from Cold Lake for the recently-shelved Esso plant proposal, and instead suggested use of the North Saskatchewan. Esso declined, says Kure, because the water was not of good enough quality for the steam process.

"We've already polluted our largest east-flowing river to the point where it's not fit to put in a steam kettle."

The Lesser Slave Lake Stabilization Plan, feels the association, reflects human settlement in an unsuitable area, a flood plain, rather than simple environmental damage. The plan aims to stop flooding of lakeshore lands which have become farmland. Over the years, silt from the Swan River has built up a sand delta at the lake outlet, which causes backup of waters. A few kilometres of the outlet will be dredged free of silt, and concrete weirs installed.

Kure says his association has occasionally been accused of blocking progress.

"We don't oppose everything, though sometimes industry feels the wildlife and environmentalist groups are always bucking development. We didn't oppose the Cold Lake project outright either, just certain techniques."

"We endorse the provincial water policy because it's a good one — but we do question a reliance on our rivers to accept more and more waste without tertiary treatment. The North Saskatchewan River is badly enough polluted that even industry won't use it."

Meanwhile, research projects now carried out by volunteers and small environmental groups should be funded by government or industry.

"Why should a nonprofit organization like the Alberta Fish and Game Association have to fund surveys for the government? Yet we're doing it continually."

Wildlife protection is also a concern to all involved in northern Alberta, and the problem is complicated by the needs of different interest groups.



Alberta Government Photo

The effect of grazing on wildlife habitats, and increased farming activity near the Green Zone, worry the Energy and Natural Resources fish and wildlife division.

"Agriculture, if it's controlled properly regarding stocking rates and range improvement, is not necessarily detrimental to wildlife," says Rippin.

But there are friction points.

"The policies are to increase and improve the opportunities for agriculture. If land is arable, or has other potential for agriculture, it will be made available for agricultural use."

Beef producers, steadily moving northward through lease or private purchase of crown lands, need grazing for their cattle. Their easiest means of obtaining it is by bulldozing the parkland or northern forest and planting tame species of grass.

In the past, wildlife officers were not involved in the decision to clear leased Crown land, or how to clear it. Conditions have improved greatly under the Range Improvement Program, started in 1980, which gives them influence on land clearing methods, size of fields, seeding and other development patterns. Government takes the interrelationship of grazing wildlife and domestic livestock in northern Alberta seriously; over 80 per cent of the program's funds are applied in the Peace River and north-eastern regions.

"We're hoping the result will be compatible to wildlife, yet will give the cattle operator a better operation."

But private land remains beyond the division's jurisdiction.

"One of our big concerns that we can't do much about is habitat losses on private land. We have information that enables us to predict that certain species will disappear in areas where they occur now. There's not much we can do about it except public information programs."

White-tailed deer, mule deer and sharp-tailed grouse are most seriously affected by the deterioration of their habitats on private land.

Elmer Kure agrees. "One of our problems with fish and wildlife is that impact is predictable, but not quantifiable. Some species can move over — but some species can't adapt and just disappear."

He also refers to the possibility of a hydro project on the Slave River between Fort Chipewyan and Fort Smith, NWT. A feasibility study is now in progress, and will be completed next summer.

"The Slave River project, in terms of impact, may be quite terrific. It's possible that a great proportion of the low-lying area at the junction of the Peace and Slave Rivers would be flooded."

If a dam were built, it could submerge the present wintering areas of the northern wood

bison herd, causing major impact despite a newly created wintering ground at Fort Providence on the Mackenzie River. At present, many bison from Wood Buffalo National Park migrate south into the sweet-grass area of the Athabasca delta, and winter there. In summer, when the ground thaws to swamp, the bison return to their summer territory in the pine and mixed-forest hills, says Kure.

"In Alberta it's winters that are the problem, because the food supply is critical. Any time you move an oil rig or coal mine or road or power project into an area, you reduce the winter food supply."

Not only specific projects, but wildlife protection in general, presents a worry to the province's conservationists, he adds.

"Alberta is badly behind in documenting wildlife ranges. We're developing so fast, we can't keep up."

Agriculture also suffers some ill effects of change and growth in northern Alberta.

Surface rights have been a problem for farmers, says George Röck, district agriculturist at Vermilion.

"There's interference between people trying to harvest their crop — that is, oil — and people with surface rights trying to harvest their agricultural crops."

A farmer owns only the top 15 centimetres of his soil, and companies who've bought the oil and gas lease own the subsurface rights. Röck estimates that in his area alone, several thousand farmers are affected, and in the past two years he's received several hundred calls about surface rights conflicts.

Oil in the area is heavy oil, which doesn't readily flow from well to well. Up to 10 wells per quarter section may stud a farmer's land, and each one costs him time and money.

New ERCB rulings improve the farmer's position by restricting drilling to the periphery of a quarter section holding; in the past, drilling companies could also install equipment in mid-field. This meant fields were divided smaller, making it uneconomic for farmers to operate their large implements. Twenty years ago, a tractor and cultivator might have a three-metre working width;

Fort McMurray.

today a 15-metre working width is common. Efficiency of work could be reduced by half in fields divided by oil company "severance."

"It becomes uneconomic to farm at this stage of the technology. Even though the land is still there, it's all chopped apart. Supermarkets are how groceries are sold these days — you can still buy at the small corner store, but with the present state of the industry it's basically obsolete. And the costs are reflected.

"In the past, the oil companies were costing the farmers much more than they paid them," says Rock. "Farmers have got quite militant through surface rights associations, and that helped bring about new regulations."

Wildlife can create its own hazards for agriculture — or at least the hunters who pursue the wildlife every fall, frequently knocking down farmers' fences and permitting stock to stray.

"If you drive into the people's livestock — deer or moose — it's too bad. But if you run into cattle, the owner of the cattle is responsible for the accident."

He adds that good guidelines drawn up between farmers and fish and game and environmental groups have alleviated the problem.

"Both have given a little bit, and they've come up with guidelines that have a good chance of success."

Opening of new grazing land has resulted in more feed for both wild and domestic species, Rock suggests.

"There is some competition, but clearing woods into pasture provides more grazing for both wildlife and livestock," he says. "People feel there's only a certain amount of feed, but after good wildlife and domestic management there's more feed than before."

Environmental change is largely a factor of human change — so where do human beings fit into the spectrum?

Boom and bust just about sums it up, says Ron Gaunce, a consultant for family and community support services with Alberta Social Services and Community Health.

Fort McMurray's population 20 years ago was under 1,000. Today it's around



Alberta Government Photo

31,000 and rising, though high turnover rates make any figure uncertain. The "shadow population" — perhaps double or three times the official population as people move in and out — means community projects are seriously under-funded. Housing is next to impossible to acquire. Trailer and tent shantytowns, full of squatters or "nesters," spring up in newly cleared subdivisions before houses can be built. Divorce rates are sky-high. Alcoholism is prevalent. Families and individuals are constantly on the move. Physical and social services are strained to bursting point. Teachers are pleased when one or two of the original students last through the school year to June.

"What you get is a dynamic where everything is behind. There's a dearth of housing because of the sewer system which is already overtaxed — you get to a point where you can't add any more houses to the system."

At that point, it's necessary not only to expand the sewer system but to build a completely new treatment plant. A briefly adequate traffic-light system was suddenly swamped by traffic, resulting in urban-style jams. Now an overpass is under construction at a major intersection. Fort McMurray is not just booming — it's exploding.

"Megachange" is Gaunce's term for the phenomenon, and it takes a toll in human happiness.

"When you get a boom like this, it draws

people whom you'd have to call marginal. You get an awful lot of people looking for the last chance — the last chance to make it big, the last chance to keep a marriage together. They're likely to be people who need more than usual support services, but they're going into a situation that gives them less support than most established communities."

Minor problems rapidly become major problems under this kind of magnifying-glass treatment, Gaunce says.

Although a population of 70,000 to 80,000 is projected for the year 2000, he feels the true figure will be much higher.

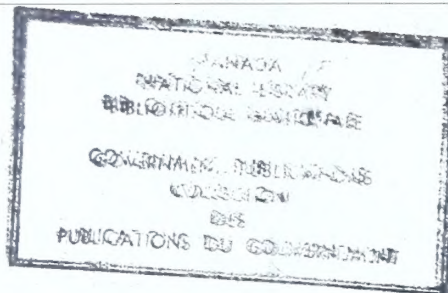
"You're looking at one plant, then another and another. It's almost a geometric progression. The impact in human terms is much greater than just adding one more plant."

Native communities have suffered in different ways.

"They're trying to find their balance in all this change. Add the culture shock of development, add the dependency created by 100 years in which people have been trained that the only available support is welfare, add alcoholism and the effects of development on trapping and fishing — they question whether to turn back or go on, but they have no choice."

If undelivered, return to:

Environment Views
Alberta Environment
9820 - 106 Street
Edmonton, Alberta T5K 2J6



Environment Update

Shortgrass Prairie Threatened

Western prairie as the Blackfoot knew it still exists in Alberta. But its existence is threatened, and Environment Canada staff are among those trying to ensure its preservation.

The original shortgrass prairie can be found on much of the 1,100-square-mile expanse of the Suffield Military Reserve near Medicine Hat.

Set aside by the federal government 40 years ago for military use, it is still used by the federal department of national defence for research, and by the British Army for military exercises. It is also the site of natural gas production and oil drilling by the Alberta Energy Company, and cattle grazing by the Prairie Farm Rehabilitation Administration.

Ranchers have been able to use the land for grazing under a five-year agreement which expires next year. The Alberta district of Environment Canada's Environmental Protection Service is concerned about the effects of overgrazing, which could kill

the perennial grasses of the shortgrass prairie, and thus threaten habitat for deer, antelope and peregrine falcons, among many other species.

The Canadian Wildlife Service has proposed that parts of Suffield be set aside as a wildlife reserve — a proposal supported by Environmental Protection Services.

Environmental Warning Issued

A stern environmental warning has been sounded in the United States with the publication of *The Global 2000 Report to the President: Entering the Twenty-first Century*.

The report, prepared by the President's Council on Environmental Quality and the U.S. Department of State, notes: "If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now."

Among the report's sobering projections:

- world population will grow from 4.5 billion today to more than six billion in the year 2000 — and most of the 100 million people added each year to the world's population will live in the poorest countries;
- world food production will increase 90 per cent between 1970 and 2000 but mostly

in countries that are already comparatively well fed;

- between 15 and 20 per cent of all species of plant and animal life could be extinguished by the year 2000, creating a tremendous drain on genetic resources.

Workshop Held

About 60 representatives of communities interested in hazardous wastes disposal attended a two-day workshop in Edmonton at the end of October.

The workshop, organized by the Rural Education Development Association, was designed to allow discussion and the prioritizing of community concerns about hazardous wastes disposal.

Workshop participants, who had earlier been involved in community public meetings on the subject, recommended that the provincial government establish a system for hazardous wastes disposal, and get it working, as soon as possible. They stressed the need for an accompanying broad education program.

Seminar Scheduled

The Banff Centre School of Management will run a seminar on "How To Manage Rural Land Use Change" from January 24-30, 1982.

Land use problems will be approached from three main perspectives: legal, ecological and economic. Particular attention will be paid to present government land use policy by examining the regulations of various levels of government.

The seminar will include a comprehensive field trip and case study exercise of the Columbia Valley in British Columbia.

If you have a short news item of province-wide interest you'd like to contribute to *Environment Update*, please send it to the editor at the address on the Contents page. The editor reserves the right to select and edit the items.

